VOL. IV, NO. 3 $1.00 A YEAR

OCTOBER, 1908

SELLING ELECTRICITY

Edited by FRANK B. RAE, Jr.

The next issue of SELLING ELECTRICITY will be

The TUNGSTEN LAMP NUMBER

in which every Commercial phase of the tungsten lamp will be analyzed by practical Central Station men who have had experience with the new high efficiency units.

The TUNGSTEN LAMP NUMBER

will be 16 pages larger than this issue. It will be profusely illustrated, printed on heavier paper and will be typographically the best paper in the central station field. Contributions by

MANY WELL-KNOWN AUTHORITIES

will be published; interviews with some of the most prominent commercial men in the field have been secured; the experience of dozens of shrewd business-getters will be offered in the November

TUNGSTEN LAMP NUMBER

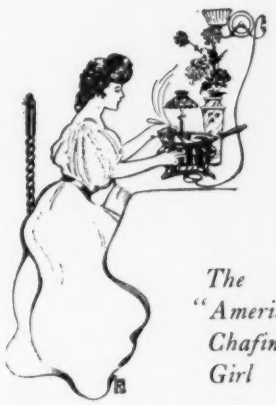
Copyright 1908, by FRANK B. RAE, JR.

¶Do you want to get hold of a line of portable lamps that will really sell? That will be within the reach of your customers?

¶We call your attention to the lamp illustrated above. A number of Central Stations are selling this portable for $10. There's a small profit for you even at that price. The lamp, however, will sell readily for $12 or $14.

¶You want our catalogue. It will show you a wide assortment of handsome art portables that your customers can afford to buy. Our lamps and our prices will interest you. :: ::

The
Goodwin & Kintz Company
WINSTED, CONN. Station 1



The "American" Chafing-dish Girl

Sell Service

You're looking for goods that are easily sold, that stay in order, that the consumer uses whenever possible and is proud of.

Aren't you?

If you are looking for that sort of chafing-dishes, percolators, disc heaters, curling-iron heaters and flat irons—we can do business together.

In selling **American** goods you are selling solid comfort, you are selling *constant service.*

Why not sell goods that will be a continuous source of revenue *after* the sale? That means more than a little profit *on* the sale.

We have a catalog for you —*free.*

American Electrical Heater Company
Detroit, Michigan

008

The Lighting of a Drug Store

In the October issue of "*Holophane Illumination*" — a small monthly magazine devoted to the Holophane System of Illumination, there is published the second of a series of practical articles, entitled

"*The Lighting of a Drug Store.*"

Anyone interested in the subject of Illumination in a practical way should see this issue. Mailed free on request.

Address Publicity Department

Holophane Company

227 Fulton Street
New York City

Boston San Francisco Chicago

IT IS OUR BUSINESS
TO GET
NEW BUSINESS FOR YOU

We can do it if you will give us a chance.

We have been doing it for other companies and know what we are talking about.

We don't serve our clients with luke warm syndicate matter. We give them absolutely individual treatment.

First we locate the cause, then the effects, and finally show the remedy.

That is what our Commercial Engineering Investigation consists of.

It shows you where your commercial department is weak and shows you how to strengthen those spots.

Then, if desired, we will "apply the remedy" we have prescribed.

We don't give you valueless advice — we back our statements by work.

Let us hear from you in regard to this proposition.

It may mean money to you.

Write us to-day.

C. W. LEE COMPANY

West Street Building **NEW YORK**

When a Customer Kicks

Three-quarters of the complaints that reach your office are caused by high bills.

Customer claims he didn't use so much current. Meter says he did. You must rely on the meter, of course.

But is the meter reliable?

To satisfy the customer—and yourself—you order the meter tested and if you find it wrong YOU LOSE—your prestige with customer, the amount of the adjustment of the bills, the cost of repairing the meter and—YOUR TEMPER, but—

The customer tells his friends.

Next time any of these friends has a high bill he kicks.

More inspections, tests, repairs, adjustments—all costing money.

What are you going to do about it?

THE WISE THING is to ADOPT Fort Wayne TYPE K METERS

They are RELIABLE. They require the minimum of inspection—practically no repairs. They are ABSOLUTELY dust- and insect-proof. They are sturdy—built for PRACTICAL service.

Bulletin 1053 tells the story. Get it.

FORT WAYNE ELECTRIC WORKS

"Wood" Systems **FORT WAYNE, IND.**

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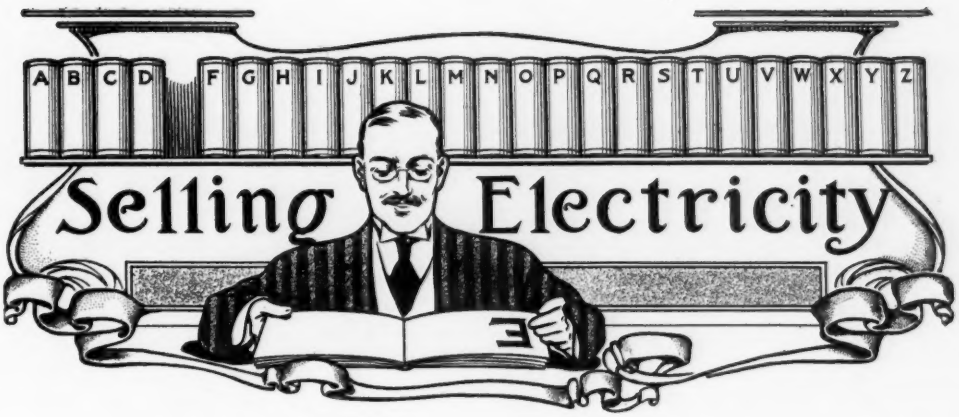
"Tire trouble" was the excuse given by every automobile driver who didn't win the Vanderbilt Cup.

"Tire trouble" is what ails most men who fail in the race of life.



Winning Public Confidence

"PUBLIC CONFIDENCE" is fast assuming a real meaning, signifying in the minds of public utilities men something closely akin to "good will" as it is generally understood. And with this appreciation of the value of public confidence comes increased discussion as to how it may best be secured. It is not an easy problem, nor yet one of such formidable proportions as some weak-hearted magnates seem to fear. It is, at best and at worst, but a matter for cold, calculating common sense—a problem to be faced fearlessly, but with absolute candor.

Confidence is the twin sister of respect, and so long as a utilities corporation does not inspire respect it will never win confidence. Honesty, dignity and faithfulness to all obligations, written or implied, form the basis of respect. It is not a thing that can be purchased nor a sentiment that can be engendered by printers' ink alone.

Lighting Retail Stores

THE *Dry Goods Economist,* well known as one of the foremost papers in the dry goods and department store fields, has begun the publication of a series of articles on "Scientific Lighting." The first of these, by Norman Macbeth, appears in the issue of September 26th.

While any articles of this nature are sure to breed the desire among merchants for better lighting, it is regrettable that the matter should have been handled in the way it has. Mr. Macbeth takes occasion to "knock" every class of Illuminating Engineers except his own class. The Engineers employed by reflector, fixture, and gas burner manufacturers, as well as the lighting specialist of the central station, are severally grilled.

There is just enough of truth in this point of view to impress the layman. On the other hand, it is rank injustice to a large body of honest and earnest men who, while having commercial affiliations, are faithfully striving to improve lighting conditions and to place the profession of Illuminating Engineering upon a solid foundation.

Mr. Macbeth forgets that it was a reflector manufacturer who, when the bank containing the Illuminating Engineering Society's funds was closed during the panic, personally advanced over one thousand dollars to carry on the Society's work; that the men responsible for the birth of the scientific fixture are today supporting that Society's publications by contributions disguised as "advertising"; that the foremost independent Illuminating Engineer of the country is retained by an electric light company to aid its customers in correcting wasteful installations; that, finally, the brains, energy and money required to launch this new profession and establish it firmly as a *bona fide* branch of science, are supplied by the very men he derides and warns the public to beware of.

But despite a sour and selfish attitude upon the part of the writer, the articles will do good. They will arouse interest, breed dissatisfaction with old and wasteful lighting methods. The *Dry Goods Economist* is to be congratulated for taking this progressive step.

A Dollar Idea

From the "Emerson Monthly"

A NEW MOTOR USE

THE latest use for small electric motors is reported as follows by the Nevada Electric Company, of Nevada, Iowa: "Perhaps washing chickens' feet by electric power is a new scheme to you, but we have a subscriber who operates a produce and poultry establishment, and buys and dresses considerable poultry. He has a scheme to operate a revolving brush, with the lower edge in water, for the purpose of cleaning the feet of fowls after they are dressed."

Illuminating Engineering Society Convention

A Report by T. W. Rolph, Illuminating Engineer

THE second annual convention of the Illuminating Engineering Society was held in Philadelphia, October 5th and 6th. An extensive program of eighteen papers, covering practically all branches of illuminating engineering work, was carried out. In addition, an attractive program of entertainment was arranged for the ladies and for the members and guests during the spare moments when their minds were not occupied with the more serious matters of the convention.

The complete program of papers is as follows:

Monday, Oct. 5th, 10:20 A. M.

1 President's Address.....Dr. Louis Bell
2 Report of Committee on Nomenclature and Standards....Dr. A. C. Humphreys

Monday, Oct. 5th, 8 P. M.

3 "Modern Gas-Lighting Conveniences".....By Dr. T. J. Litle, Jr.
4 "Illuminating Value of Petroleum Oils".....By Dr. A. H. Elliott
5 "Street Lighting Fixtures: Gas and Electric".....By Mr. H. Thurston Owens
6 "Structural Difficulties in Installation Work".....By Mr. James R. Strong
7 "Architecture and Illumination".....By Mr. Emile G. Perrot

Tuesday, Oct. 6th, 9:30 A. M.

8 "Intensity of Natural Illumination Throughout the Day".....
.....By Mr. Leonard J. Lewinson
9 "The Integrating Sphere in Industrial Photometry".....
.....By Dr. Clayton H. Sharp and Mr. Preston S. Millar
10 "The Ives Colorimeter in Illuminating Engineering".....Dr. Herbert E. Ives
11 "Calculating and Comparing Lights from Various Sources".By Mr. Carl Hering
12 "The Calculation of Illumination by the Flux of Light Method".....
.....By Mr. J. R. Cravath and Mr. V. R. Lansingh

Tuesday, Oct. 6th, 2 P. M.

13 "Street Lighting with Gas in Europe".....By Mr. E. N. Wrightington
14 "Design of the Illumination of the New York City Carnegie Libraries.....
.....By Mr. L. B. Marks
15 "Engineering Problems in Illumination".....By Mr. Alfred A. Wohlauer
16 "Intrinsic Brightness of Lighting Sources".....By Mr. J. E. Woodwell
17 "Some Experiments on Reflection from Ceiling, Walls and Floor".....
.....By Mr. V. R. Lansingh and Mr. T. W. Rolph
18 "The Relation Between Candle-power and Voltage of Different Types of Incandescent Lamps".....By Mr. Francis E. Cady

Many of these are of only passing interest to the Central Station man, but others contain points which deserve his attention. In the presidential address, Dr. Bell took up the lighting of American streets, showing how unfavorably these compare with the streets of Europe. He made a plea for better street lighting in this country.

The paper of Mr. T. J. Little, Jr., on "Modern Gas Lighting Conveniences," is of interest in so far as the Central Station man desires to know the other fellow's game. At present there are two general methods of lighting gas burners, viz: electric and pilot-flame. Electric ignition is accomplished in two ways, by the jump-spark (high tension) and by the interrupted low tension (make-and-break) ignition. The electric systems are used only when a large number of burners are to be lighted at the same time. Their disadvantage lies in the fact that they require electric wiring in addition to the gas piping, and when this wiring is for high tension, especially good insulation is necessary, as the voltage on such circuits runs very much higher than the ordinary voltage for electric lighting. The question of gas leakage, due to the pilot-flame giving out and gas continuing to escape, was brought up and Mr. Little stated that the pilot consumes about one-twelfth cubic feet of gas per hour and that the ventilation in any room, even with closed doors and windows is faster than this.

The self-lighting mantle, about which considerable has been said, in the past, was also mentioned and Mr. Little stated that it is not yet a commercial proposition.

Passing over the next few papers, the paper by Mr. Lewinson on the "Intensity of Natural Illumination Throughout the Day," is of interest because it shows the wonderful adaptability of the human eye. The maximum intensity of illumination obtained directly from the sun in these tests was 12,420 foot-candles. The eye can adapt itself to such an illumination, with difficulty, it is true, but this intensity may be considered within the upper range of the eye's adaptability. The lower range is in the neighborhood of a few thousandths of a foot-candle. The maximum value of moonlight obtained by Mr. Lewinson was about .04 foot-candles.

Messrs. J. R. Cravath and V. R. Lansingh presented what is perhaps the most valuable paper of the convention, entitled, "The Calculation of Illumination by the Flux of Light Method." They describe a method of determining average intensity of illumination without calculating the illumination at each point. This elimination of the point-by-point method of calculation is an important step toward simplifying the calculation of illumination. The only weakness of the new method lies in the fact that it fails to consider the uniformity of illumination obtained. Uniformity may be obtained by checking the illumination at various points in the old way and changing the location of light sources until proper results are obtained; or it may be obtained by following certain spacing and height rules which are adapted to particular units or reflectors. Of special value is the short method, proposed by the authors, for determining the watts necessary to illuminate any room. The rule they propose is simplicity itself:

Total watts required = total area in square feet × foot-candles desired × constant from the table given.

The user of this rule should have some idea of the intensity of illumination which he desires. This can be easily obtained from some of the many schedules which have been pub-

lished showing foot-candle intensity required for various classes of service. The table which the authors provide shows the constant for various conditions of walls, ceiling, equipment of lamps, and character of lamps used. A few of the constants will be of interest and value.

TABLE SHOWING NUMBER OF WATTS PER SQUARE FOOT OF FLOOR AREA REQUIRED TO PRODUCE AN AVERAGE OF 1 FOOT-CANDLE OF ILLUMINATION.
(WATTS PER LUMEN.)

Incandescent Lamps.	
Tungsten lamps rated at 1.20 watts per horizontal candle power; clear prismatic reflectors, either bowl or concentrating; large room; light ceiling; dark walls; lamps pendant; height from 8 to 15 feet	0.25
Same with very light walls	0.20
Tungsten lamps rated at 1.25 watts per horizontal candle power; prismatic bowl reflectors enameled; large room; light ceiling; dark walls; lamps pendant, height from 8 to 15 feet	0.29
Same with very light walls	0.23
Gem lamps rated at 2.5 watts per horizontal candle power; clear prismatic reflectors either concentrating or bowl; large room; light ceiling; dark walls; lamps pendant; height from 8 to 15 feet	0.55
Same with very light walls	0.45
Carbon filament lamps rated at 3.1 watts per horizontal candle power; clear prismatic reflectors either bowl or concentrating; light ceiling; dark walls; large room; lamps pendant; height from 8 to 15 feet	0.65
Same with very light walls	0.55
Bare carbon filament lamps rated at 3.1 watts per horizontal candle power; no reflectors; large room; very light ceiling and walls; height from 10 to 14 feet	0.75 to 1.5
Same; small room; medium walls	1.25 to 2.0
Carbon filament lamps rated at 3.1 watts per horizontal candle power; opal dome or opal cone reflectors; light ceiling; dark walls; large room; lamps pendant; height from 8 to 15 feet	0.70
Same with light walls	0.60
Arc Lamps.	
5-ampere, enclosed, direct-current arc on 110-volt circuit; clear inner, opal outer globe; no reflector; large room; light ceiling; medium walls; height from 9 to 14 feet	0.50

These values are obtained from actual illumination tests. As soon as sufficient reliable data has been obtained by illumination tests to increase the scope of the table, this method of calculation will become of great value.

"The Design of the Illumination of the New York City Carnegie Libraries" is a practical account of the lighting of a library in all its details. The lighting was designed by Mr. Louis B. Marks, an illuminating engineer of some note, and it therefore may be depended upon to be up to the standard of our present knowledge in illuminating engineering.

"Some Experiments on Reflection from Ceiling, Walls and Floor," by Messrs. V. R. Lansingh and T. W. Rolph, is an account of some experiments undertaken to determine just how much the ceiling, walls and floor can be counted upon to assist in

bringing up illumination values. The experiments showed what difference in illumination resulted where dark ceiling, walls and floor were changed to light colors. Where prismatic reflectors are used, the increase with ceiling, walls and floor light is 150 per cent, and where bare lamps are used, the increase varies from 260 per cent to 300 per cent. Light colors are of little value on the floor, but are of great value on the ceiling and of considerable value on the walls. A light ceiling with bare lamps increases the illumination in the neighborhood of 85 per cent., and when reflectors are used in the neighborhood of 30 per cent. The walls do not effect such a great increase as this.

The general trend of illuminating engineering, as developed by the papers at this convention, is toward the simplification of illumination calculations and the collection of much-needed data on illuminating devices and the results which they give under various conditions.

A Dollar Idea

W. S. Kilmer, Illuminating Engineer

THE lighting of a shoe store window requires especial care and attention. When russet leather is placed in a very strong light it is apt to have a mottled or spotted appearance; obviously therefore, no shoeman wants too much light in his window. This feature of the russet shoe is not an imperfection and is not noticeable in ordinary daylight. This fact was borne in on me by seeing a recent installation where something like fifteen foot-candles was thrown on the floor of a shoe window. The appearance of the russets warned me that such shoes should not be subjected to such an exaggerated test under the critical eyes of the purchaser.

When arranging the illumination of shoe windows, this point should be kept in mind, and a soft diffused light secured both for the store itself and the show windows.

A Dollar Idea

H. N. McConnell, Elmira, New York

A STRONG POWER ARGUMENT

WHERE a Company is able to offer a combination rate consisting of a readiness-to-serve charge and low price per kilowatt hour, a very strong argument can be offered. Where the readiness-to-serve charge is $15.00 per kilowatt per year, maximum demand, ask the customer whether he can install a private plant to take care of interest on investment, depreciation and other fixed charges for that amount. Follow this question immediately by asking whether by installing a plant he can produce electricity for three cents per kilowatt. I have used this argument effectively, myself, and it never fails to convince.

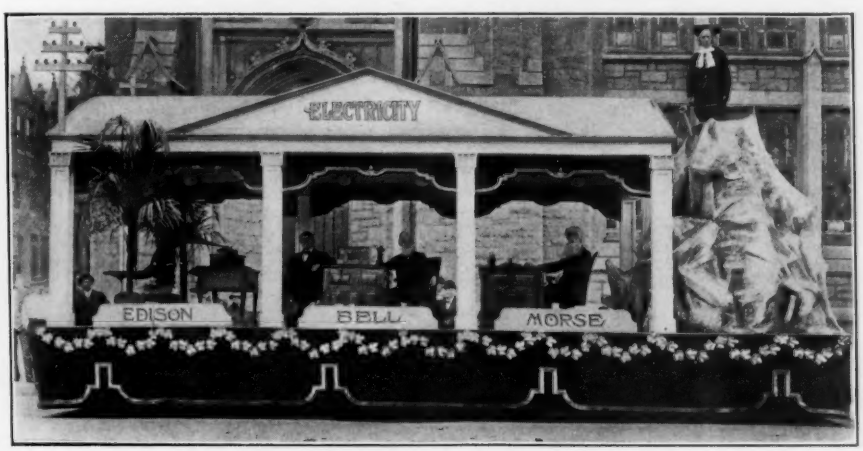
Something New in Central Station Advertising

By Howard K. Mohr
Advertising Manager Philadelphia Electric Company

IN connection with the elaborate ceremonies celebrating the 225th Anniversary of the founding of the city of Philadelphia, the municipal authorities had scheduled an Industrial Parade for Wednesday, October 7th.

A committee of prominent citizens and municipal officers was appointed by the Mayor, and this committee actively solicited the participation of all the chief industrial establishments of Philadelphia in this parade. The idea was to demonstrate pictorially, by means of floats, the development of the industries and the improvements in methods of living resulting from the establishment of these industries, from their inception to the present day. While, on the surface, the proposition appeared attractive and feasible, in reality it was extremely difficult, from the fact that all purely advertising features were strictly prohibited and the designs and plans of all proposed exhibits had to be submitted to the committee and approved by them before being accepted.

A sub-committee on Electricity was appointed, of which Mr. J. B. McCall, President of The Philadelphia Electric Company, was Chairman. This subcommittee tried hard to induce all classes of the electrical trades to participate, but at first they met with most discouraging responses. The difficulties of constructing floats which would be attractive and interesting to the masses, and the severity of the restrictions regarding advertising succeeded in discouraging the electrical manufacturers, the telegraph companies and wiring contractors. Eventually the electrical section of the parade narrowed down to the floats entered by The Philadelphia Electric Company,



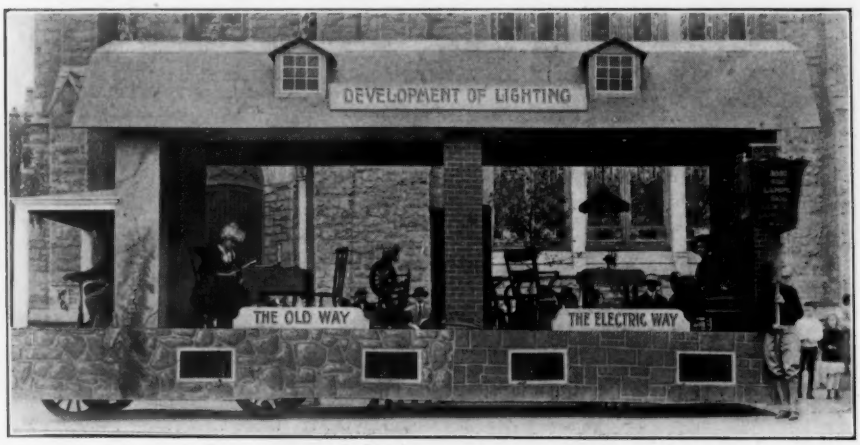
Float No. 1. "Electricity"

the Bell Telephone Company and the Keystone Telephone Company.

After considering ways and means and going into construction details of every sort, The Philadelphia Electric Company finally decided to enter a series of six floats—the first float to be semi-allegorical and the next four floats to demonstrate, as attractively as possible, what electricity has done for the city of Philadelphia (or any other community, for that matter) in the way of modern methods of working and living; the last float being merely a lamp exhibit.

The designs of the floats called for a uniform size of thirty feet by ten feet; the height being regulated by the distance from the ground to the lowest overhead trolley wire, on the line of the parade. Six of the electric trucks and service wagons of the company were dismantled, trailers were built for each and solid platforms constructed covering the two beds.

Float No. 1 was of an allegorical nature—the greater part of the float was covered by a booth, representing more or less a hall of fame, divided into three sections. In these sections,



Float No. 2. The Development of House Lighting

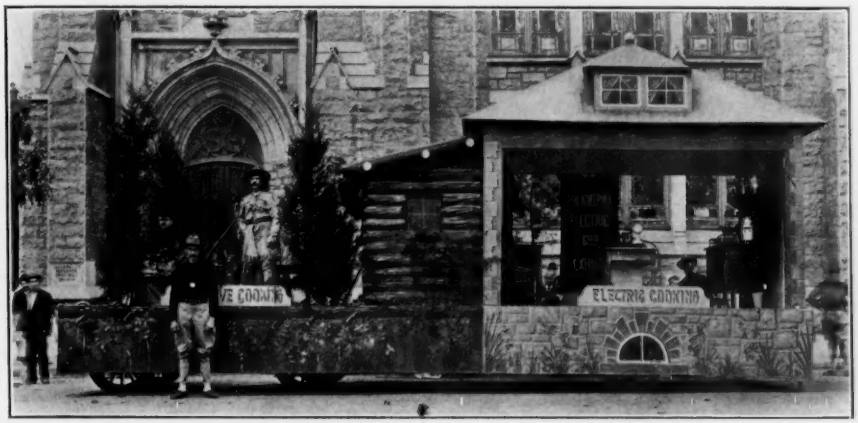
The chief problem was that of how to obtain advertising of a value commensurate with the expense of these floats. Hampered as the company was in this line by the rules of the committee, as above outlined, it was finally decided that the very best advertising result could be obtained by drawing a contrast on each float between methods of living and working before electricity was available — which was termed "The Old Way"—and the present method, which was termed "The Electrical Way."

seated at desks or in their workshops, were figures representing Edison, Bell and Morse. At the rear end of float, on a raised section, stood an individual made up to represent Franklin. A kite and string, to which was attached a key, flew over the entire float, and by means of a static machine Franklin would, from time to time, cause long sparks to be emitted, with the crackling noise common to machines of this character. This float was merely entitled "Electricity," and caused much favorable comment.

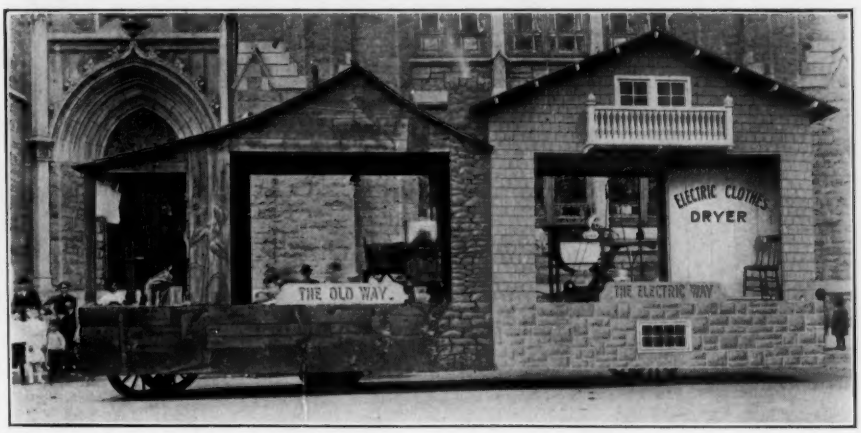
Floats No. 2, 3, 4 and 5 represented miniature dwellings and work shops, all of them roofed over and painted so as to represent true sections of the structures.

Float No. 2 illustrated the development of the lighting of dwellings. The first half of float showed the interior of an old colonial room, completely furnished, with old colonial candle sticks and lamps as the principal feature, with girl in colonial costume seated at table reading; the second half showed the interior of a modern living room, also completely furnished, with electric wall brackets, electric come light, luminous radiator, electric fan, etc., the lamps being lighted from the batteries of the truck, and the fan also in operation.

Float No. 3 represented the development in cooking methods. The first half of the float showed exterior of an old log cabin with a trapper in costume cooking his meal over a log fire. The details of this were completely worked out and the effect of the logs burning was obtained. The second half of the



Float No. 3. The Development of Cooking



Float No. 4. The Development of the Laundry

float showed the interior of a modern electric kitchen with girls, smartly dressed, operating the kitchenette and the various electrical dough-mixing and egg-beating, etc., appliances. All the small motors and the kitchenette on this float were operated from the batteries on the truck, as were also the lamps.

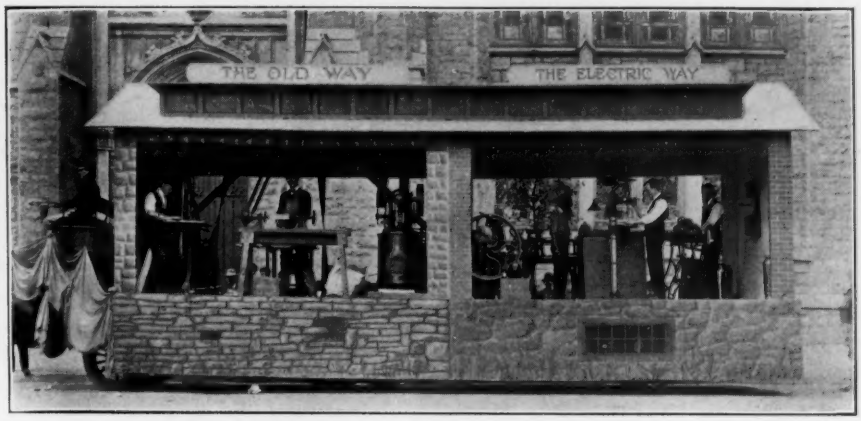
Float No. 4 represented the development of laundry methods. The first half of the float showed an old colored laundress at the wash tub in a cabin, with little children playing around the floor, old stove in the corner, with a chimney actually throwing out smoke, clothes line with the laundry hanging upon it, etc.; second half showed the interior of a modern electric home laundry, electric irons, electric washing machine, electric clothes dryer, etc.—all this apparatus being demonstrated by neatly gowned maids and operated by current furnished from the batteries on the truck.

Float No. 5 demonstrated the development in factory methods, in front being the interior of an old style wood-working establishment, operated by a stationary engine in one corner of the float. This float was completely equipped with shafting, belting and machinery, all being operated by the steam engine, which was burning soft coal and throwing out clouds of black smoke; men were at work at the different machines. The second half of the float showed the interior of a modern machine shop, all of the machines being direct connected to electric motors and in operation. The contrast of cleanliness and convenience was sharply drawn, and every detail on this float was carefully worked out.

Float No. 6 was merely a large service auto completely covered by a frame, over which was stretched blue and yellow cloth, the colors of the city. Over this entire frame were studded, in neatly worked out designs, various types of electric lamps. In the centre, on both sides, the words "Founders' Week" were spelled out in miniature electric lamps, and on the back of the wagon was The Philadelphia Electric Company's monogram in miniature lamps. The wording "Founders' Week" and the monogram were illuminated from time to time by means of a flasher, the result being very effective.

A large banner with streamers, carried by eight men, led the Philadelphia Electric section. The banner was made of blue velour, trimmed with heavy gold braid. The words "Philadelphia Electric Company's Exhibit" were embroidered in gold. Alongside of each float, smaller banners similarly made up were carried, bearing various inscriptions, such as: "In Philadelphia in 1889, 135 Horsepower in Motors Were in Use. In 1908, 41,000 Horsepower." The various banners were adjacent to the floats to which they applied. All of the employes who carried banners or who appeared in the procession, were dressed in khaki trousers and leggins, with blue flannel shirts and soft felt hats, and they made a very creditable appearance. A large band of fifty pieces marched between the first banner and the allegorical float.

Not the least of the difficulties in preparing an exhibit such as this, from an electrical standpoint, was the fact that the parade was a daylight one, thus making the illuminating feature



Float No. 5. The Development of the Shop

difficult to illustrate. Nevertheless all of the floats and the standards which carried the banners were completely wired and fitted with both standard and miniature lamps, so that in the event of the parade being postponed until darkness had set in, the appearance of the floats at night would have been even more effective than was the case during the day.

The floats were constructed and designed by the representatives of The Philadelphia Electric Company, in conjunction with Messrs. Kayser & Allman.

Although it is impossible to trace the advertising value of this exhibit, it would appear to have been very great indeed, judging from the fact that along the five miles of the parade there must have been at least 750,000 spectators, and the interest shown by the spectators in this particular exhibit was manifestly very great, if comparative applause has any significance.

A Dollar Idea

L. D. Mathes, Dubuque, Iowa

TRADING WITH THE NEWSPAPERS

IN laying out a strong Autumn campaign for new business, we decided to make an especial effort to get signed contracts. To this end we increased our advertising appropriation very materially, and a deal was put through with two of the newspapers whereby we contracted for additional space on condition that the newspaper installed a good-sized electric sign. While we bill each other and pay by check, the arrangement really amounts to practically free advertising for us both. The sign not only advertises the newspaper, but also helps us in getting new business, the object lesson of the leading newspapers in town putting up electric signs being too strong an argument for many of the prospects to withstand.

A Dollar Idea

Norman Macbeth, in the September "Illuminating Engineer"

WHEN in July, 1907, the thermometer and humidity combination were bidding for attention, the superintendent of a Philadelphia "quick lunch" restaurant was required to make an investigation as to the falling off in business. Being unable to attribute the change to any of the usual causes he observed that many would turn in at the door, stop, and walk out again. The temperature inside was lower than on the street, and the ventilation good, fans being suspended from the ceiling to convey to the customer the idea that the air was kept moving. He finally concluded that the difficulty was due to mental suggestion arising from the ordinary association of light with heat—"where we have light we have heat, and where it is dark it is invariably cool"; and this place was flooded with light. He had all the 100 watt, 40 candle-power lamps changed to 20 candle-power, and found that the trade picked up immediately. The 40 candle-power were put back in September. This year the change from 40 candle-power to 20 candle-power was made in June, with the change back to 40 candle-power in the last week in August. No falling off in patronage was marked up against this Automat this year, the report showing an ever increasing business.

Kansas Association Gets Together

THE program for the Eleventh Annual Meeting of the Kansas Gas, Water, Electric Light and Street Railway Association has just been received. The Convention will be held October 8 and 9, at the Hotel Stilwell, Pittsburg, Kansas. The social features consist in a theatre party and a trolley excursion, while the business meetings will consider the following papers:

"Street Lighting; Arc and Series Tungsten," N. R. Birge, General Electric Company, Schenectady, New York.

"Electrical Jobbers," P. B. Chaney, Monarch Electric Company, Kansas City, Mo.

"The Correct Rate to be Charged by Central Stations," W. A. Scothorn, Hutchinson, Kansas.

"Commercial Insulation of Wire," F. H. Dimick, International Lecture Institute, New York. Illustrated by Lantern Slides.

"Finances of the Light Business," H. V. Forest, Superintendent Winfield Electric Light Company.

"Steam Turbines," C. R. Mackay, Manager Toledo Street Railway and Light Company, Toledo, Ohio.

"Incandescent Lamps," Mr. Doane, National Electric Light Association.

"Our System of Bookkeeping and Records," Dow R. Guinn, Pittsburg Water Supply Company.

An Adventure in Overalls

A Personal Experience Which Shows the Value of Getting Down to First Principles

By R. A. MacGregor

IT is seldom that a man can point to a single incident in his daily work, a single experience, that has been the basis of his success. I had a little episode with a motor customer, however, that I believe is responsible for our having taken on about 600 horse power in motors, with its increase of revenue of about $12,000 per annum, in a little over five months.

Mr. R. A. MacGregor

On taking up the duties of Commercial Agent for the Wyoming Valley Gas & Electric Co. of Plymouth, Pa., I found that the power business had been very badly neglected, and as soon as I got into working trim I started out to interview every user of power in my territory. This consisted of the towns of Kingston, Plymouth and Nanticoke, all over 10,000 inhabitants and also eight smaller boroughs of from 1,000 people up, situated along the banks of the Susquehanna River, near Wilkes Barre. We had a very busy locality, being in the heart of the anthracite coal district and a large number of manufactories were located in this section.

On my first trip around I took in all plants, one or two of which had already adopted electric drive, and went over the power situation in a plain every-day way. I hoped to cement our present consumers more closely and to give the others something to think about until I could take up their individual cases more thoroughly and also to start them talking among themselves. Another reason for this complete canvass was to discover anyone who might be on the verge of buying new equipment of any kind, and to get an idea of the condition of the boilers and engines, as it is almost useless to talk power to a man who has just purchased a new boiler or engine, or both. He must have time to forget the investment he has made. Also in this way you can get a line on the best

prospects and those which will mature first, and arrange your prospect file accordingly.

During my third day out I called on the owners of a feed mill who had been using electric power for about eight months and had an installation of fifty horse-power divided into one 30 horse-power motor on a Robinson nutrition mill, and two 10 horse-power motors running a burr mill, elevators, conveyors, etc. Everything had been running very satisfactorily up to this time, but they expressed a surprise at my call, and seemed very well pleased, as they said no one seemed to care anything about the installation since the contract was signed. They had a number of inquiries to make about the care of the motors, the reading of the meter, etc., all of which I answered and explained as clearly as I could, avoiding as far as possible any technical terms.

Inasmuch as entire approval of their equipment and of its past performance was expressed, I did not make any close inspection of the machines, but confined myself principally to the promotion of amity. Had I studied the conditions under which the 30 hp. motor was periodically working I should have advised certain immediate changes which would have prevented the sequel that was of such assistance to me. They became very much interested in me and my work and told me before I left that whenever I had a prospect that was skeptical to bring him around and they would take care of him.

A day or two afterwards I made a second call, this time on the proprietor of a planing mill, whose boiler and engine were in bad shape. The planing mill, by the way, besides being good business from an advertising standpoint, is one of the easiest propositions to handle, owing to the load factor. I had this man about convinced that he ought to make a change and adopt electric current. I had figured out the installation as to size and number of motors, also cost of same, and was endeavoring to get him over the fence, as it were, when their telephone rang and I was called to the 'phone. I picked up the receiver and recognized the voice of my friend of the feed mill, asking me if I would come right down to his mill, as his 30 horse-power motor had burned up and he wanted me to take care of it for him. I made one or two inquiries to try to determine, if possible, what the trouble was, but as he was very much excited I could get nothing intelligible from him, so I told him I would be down as soon as I finished with my planing mill man.

Of course the conversation had been very audible in the office and when I hung up the receiver my prospect had almost faded out of sight. I knew that I would have to put on a bold front or all my work would be in vain, so I sat down and sailed into the proposition again as if nothing had happened. I think that my nerve held me in good stead for he seemed to be completely mystified to think that I would still try to sell him after just getting word of the failure of a motor.

He finally asked me what seemed to be the matter with the feed mill motor and I told him that I did not know at that time, but that inside of fifteen minutes after I left him I

could probably tell him all about it. I told him I could not see that it was anything serious as I had looked the motor over only a day or two before and found it running nicely. He would not give me a contract at that time but told me to let him know the result of my investigation of the other motor as soon as I could.

Of course, there was nothing further to do there, so I went over to the feed mill and found the two proprietors, as well as one or two of our own men, examining the motor, but as yet having come to no definite conclusion as to the cause of the trouble. Everyone seemed to feel, however, that the motor was out of commission; and, as I was still in the position of a new man with my company I had the pleasure of noting sarcastic expressions on the faces of our own men who had been unable to locate any trouble.

This motor was situated in the basement of the mill and it was rather amusing to see me dressed for interviewing consumers climbing around belts and pulleys in a dirty feed mill cellar, but I felt that my opportunity had come and I went to work with a will. It was then that my early training on construction gangs came in handy, for I soon discovered that the smoke was coming from a deposit of damp, sticky corn and oat flyings, which had become imbedded in the inside of the armature, clogging up all air ducts so that ventilation was entirely cut off. This caused the motor to get hot enough to make this mixture steam and parch, which gave rise to the smoke which they had discovered coming from the motor. I pulled the stuff out of the motor by the handful.

The question of cleaning the motor came up then and they were very much worried as they could not spare the mill long enough to have it repaired during working hours. I told them that they would have their motor at starting time the next morning and they seemed more than surprised when I sent our men home for supper and told them to bring back a pair of overalls and jumper for myself. We went to work at 6.30 p. m. and by 11.30 we had taken the motor to pieces, cleaned it thoroughly, reassembled it and had it running. We also found that the man who had the care of these motors had been in the habit of pouring a pint of oil into each bearing and this had run out on the inside of the bearing and down into the stator winding, where, having mixed with the flyings, it made a very thick paste which was smeared over the lower half of the motor almost one-half an inch deep.

I went around to the mill in the morning so as to be on hand when things were started and assisted in putting on the belts and placing everything in proper order. Of course, when we had everything running nicely, I was covered from head to foot with grease, oil, meal and other kinds of dirt. Before I could get cleaned up the owners came in and on seeing me in dirty overalls were thunder-struck, but I had the satisfaction of noting that they were pleased and that from that time on they would trust me in everything pertaining to the business.

Some very complimentary remarks were made in regard to the way the

trouble had been handled and when I told them of the way their telephone call had interrupted a motor sale on the day previous, they said, "Just leave it to us, we will take care of it." Later they called my planing mill friend on the telephone and told him all about their breakdown, as well as giving me a generous boost, and not satisfied with that, one of the proprietors drove over and had a personal talk on the matter, strongly advising motor drive.

A few days later I called on the planing mill man myself and had no trouble in closing the sale and current contract, although I had to take the sale with the guarantee that I would give the installing of motors and the wiring of the mill my personal supervision. I agreed, and when motors were installed I took advantage of the opportunity and placed them in different positions, mounting some on the floor close to the machines they were to drive, some on the side wall and some on the ceiling, running inverted. This helped later to demonstrate the flexibility of the proposition and assisted in closing other deals.

An experience in this mill also caused considerable comment and increased the confidence of my consumers in me as it was told all over the district. While the motors were being set I had only directed the work, not finding it necessary to get into working clothes. One day, however, when the 20 horse-power motor was being placed on the planer, I had to again jump into the fray. Up to this time the mill foreman, who had always been used to steam, had been a skeptic and not very friendly toward the work, showing his feelings by finding fault about trivial things. I suppose he thought that because I always came to the mill well-dressed I did not know how to work and he was certainly very much surprised on this particular morning, for when the belt would not stay on and the motor did not start the planer readily, I slipped into a pair of overalls and relined the motor, increased the starting voltage and soon had things running nicely. From that day to this he has been one of my best friends in that territory, and when I brought prospective consumers there, as I often did, he never could say enough to help me.

Thus it is with the salesman who is not afraid to doff his "biled" shirt and collar and get down on a level with the men who have to run and take care of the apparatus he is selling. I have found that while the mill foreman and workman cannot always help you get an order, if ever, they can make things miserable for you after the apparatus is in, so it pays to cultivate their friendship and gain their respect and good will.

Illuminating Engineering

A Paper Read Before the Ohio Electrical Convention

By J. S. Codman, Boston, Massachusetts

THERE appears to be every reason to expect a great expansion of the electrical business in the near future. Not only may we expect an accelerating rate of increase in the use of electricity for power, heating and cooking, but we are also on the eve of a great era of expansion in the use of electricity for lighting. Electric lighting is today the most important part of the central station business, but its supremacy has been threatened, and not long ago, I believe, there were a number of us who expected to see the power business pass ahead of it in the near future. We must revise our opinions now, however, and admit that electric lighting seems destined to maintain for many years to come its supremacy as the most important part of the central station business.

This change in the prospects of electric lighting is of course due directly to the reduction in its cost brought about by the advent of high efficiency lamps, especially the tungsten.

This reduction in cost was at first feared by many central station managers, who thought that the income of the stations might thereby be reduced, but it is now pretty generally felt that it will give a tremendous stimulus to the electric lighting business and will react favorably on the power, heating and cooking business as well. I venture to say that you have nothing to fear and everything to gain from a reduction in the cost of electric light, heat or power, whether as the result of a reduction in the cost of producing electric energy or as the result of improved processes in the transformation of electric energy into light, heat and power.

Electricity has many worlds yet to conquer, and when it can compete on equal terms as regards cost, its complete victory will be assured.

In co-operation with customers there is, at least in the lighting field, a great opportunity to bring down the cost, since the waste by customers not only in converting electric energy into light, but also in the use of the light itself is something prodigious. This continual waste unrealized by customers leads to the impression that electric lighting is more expensive than is actually the case, with the result that many are afraid even to try it and the growth of the business is therefore stunted.

One of the principal objects of the science of Illuminating Engineering is to prevent or at least check this great waste, and some knowledge of its principles is therefore of great value to those connected with the central station business.

To be a skilled illuminating engineer, however, well versed in all the complex mathematics of the subject, is not necessary for the accomplishment of great results. Many of the ways of wasting electricity or light are perfectly obvious and can be

easily remedied either by adopting certain policies, or by a campaign of education among the customers.

For example, how much electricity is wasted by customers through the use of cheap lamps of low efficiency, and by the use of lamps after they have reached the end of their useful life? This can best be remedied by the adoption of the wise policy of furnishing lamp renewals to customers either free, or at least at less than the market price, and by the offering of these renewals at stated intervals. This policy enables the company to supply its customers with lamps of high efficiency, and to a great extent prevents them from being used too long.

Another prolific cause of waste against which customers should be warned is the use of dirty lamps. From 20 to 30 per cent. of the light may easily be wasted in this manner and such a condition of affairs is very detrimental to the interests of the central station.

The use of an unnecessary amount of light is still another form of waste. This is most common in residences where 16-candle power lamps are often put in every socket, as the result of the policy of not encouraging customers to use lamps of less candle power. This practice may have a most unfortunate effect leading custobers to use 16-candle power lamps in many places where 8, 4 or even 2 candle power lamps might give all the light needed. And this unnecessary addition to the bill will deter the customers from using lamps of higher candle power than sixteen in those places where such lamps are really needed. The result is too much light in some places and not enough in others, and again electric lighting appears to be inefficient and expensive. Of course, customers must not be urged to be penurious in their use of light. They should have abundant light for their purposes, but more than is needed is undesirable. Bills commensurate with the actual results obtained by the customers, will be a source of satisfaction and it should be remembered also that low bills for lighting will lead to the use of electricity for other purposes likely to have a better effect on the station load factor.

Another cause of waste, also most common in residences, is the failure to make it easy to turn lights on and off. Lights are sure to be left burning, if otherwise, it is necessary to grope about in the dark. Here is an opportunity to impress upon our architects and customers the desirability of plenty of switching properly located. Often the money spent in unnecessarily elaborate fixtures might be spent on switches and extra lighting outlets to the great ultimate satisfaction of the customer.

The above described ways in which electricity and light are wasted are, as already stated, obvious and to overcome them requires no technical training.

There are other ways in which light is wasted, however, which are not so obvious, and to overcome which some knowledge of illuminating engineering principles is necessary. First, there is the practise, far too common among us, of blinding ourselves with dazzling lights directly in the line of vision. The resultant glare makes it impossible to see well,

but the true cause of the trouble is often not appreciated and the demand is therefore for increased light which only increases the glare and is consequently wasteful. The use of bare incandescent lamps is a form of waste of a particularly unfortunate character, for not only does the customer fail to get the best illumination for the minimum amount of money spent, but also the practise directly injures the business by giving electric lighting the reputation of being bad for the eyes. As a rule the lights themselves are not what we want to see, but the illumination due to them. If possible, therefore, the lights should be put out of the line of vision, but if this is not practicable satisfactory results can be obtained if their brilliancy is kept down. By low brilliancy, however, is not meant, necessarily, low candle power. The brilliancy of a light source depends not on the total quantity of light emitted, but on the quantity of light emitted in proportion to the area of the surface presented to the eye. For example, a bare 16 candle power lamp gives about the same amount of light as the ordinary flat flame gas burner taking 5 cubic feet per hour, but the bare incandescent is by far the more brilliant of the two. The area of filament presented to the eye is only a small fraction of a square inch, while the gas flame has an area of perhaps three or four square inches. In fact the flat flame gas burner, and the candle are examples of light sources of low brilliancy, and the possession of this desirable quality of low brilliancy undoubtedly accounts to a considerable extent for the stubborn way in which these light sources continue to hold a market, in spite of the advent of lamps of much greater economy. The brilliancy of the incandescent lamp, however, can be readily reduced by enclosing it in a properly designed diffusing globe of opal ground or prismatic glassware. Globes can be obtained which will absolutely conceal the filament of the lamp and will make the light appear to come evenly from the whole surface of the globe itself, thereby increasing the area of the light source and reducing the brilliancy. At the same time, the actual loss of light is trifling as compared with the great reduction in brilliancy.

The brilliancy of the tungsten lamp is far greater even than that of the old carbon lamp and in my opinion the use of it unshaded is almost criminal. It is most commonly used today with a deep Holophane reflector and the tip of the lamp frosted, so that the filament itself is not seen. The reflector and frosting cause some loss of light, of course, but this loss is absolutely negligible when the great reduction in brilliancy is taken into consideration together with the fact that an actual average increase of light of 13 1-2 per cent. is obtained in all directions below the horizontal.

And this last statement leads us to the consideration of still another cause of great waste of light, namely, that due to the thoughtless and indiscriminate use of globes and reflectors. There are two ways in which this may occur, first by the actual absorption of the light and second by the failure to direct it where it is needed. Well-designed globes and reflectors are exceedingly valuable devices both for softening the light,

that is for reducing its brilliancy, and for distributing it in the desired directions. They should, however, be used intelligently. If used without knowledge of their effect they are often worse than useless.

Not very many years ago the illuminating engineer who wished to know about the effect of different reflectors had to make the test himself, or guess at the results. Today a number of the prominent manufacturers publish photometric curves of globes and reflectors used with different light sources and in many cases the tests from which these curves are derived are not made by the manufacturers themselves, but by outside impartial experts who make a business of accurate testing. These curves are readily obtainable and in many cases the knowledge obtained thereby, together with a fair working knowledge of the principles of good illumination, is all that is needed in order to lay out lighting installations in a very satisfactory manner.

In the case of very large, or complicated problems, it is generally advisable to call in the services of a consulting illuminating engineer, if there is none such connected with the company, but for most cases the manager of the company, or one or more of the solicitors can acquire all the necessary information.

I have not felt that it was within the scope of this paper to discuss any of the technicalities of illuminating engineering nor to make any general statement of the principles of good illumination. There is one question, however, which I wish to take up in some detail as it is one that should be understood by all interested in commercial lighting. This is the question of the amount of illumination required for different purposes. For instance, we must have a certain amount of illumination on the page in order to read ordinary print with comfort. To do drafting or fine sewing somewhat more illumination is required. Again a show window must have more illumination than the interior of the store.

Illumination is not light, but the effect of light. A candle gives a certain amount of light no matter where it is placed, but the illumination obtained from the candle, on the pages of a book for example, depends on the distance of the page from the candle and on the angle at which the light strikes the page. We can get the same illumination on our book from a candle as we can from a 16-candle-power lamp, but to do so we shall, of course, have to hold the book much nearer. Is there not then some unit in terms of which we can express illumination, just as we use candle power to express intensity of light, and is there not also some way of getting an idea of the value of this unit? We all certainly have some idea of the value of the candle-power. If a lamp is said to give a light of 100 c.p. we think of it as a light equal to 100 candles, and we feel that we grasp what is meant. Why then may we not also have a unit of illumination and an equally concrete idea of what is meant by it? Engineers have used for a long time a unit of illumination called the foot candle, and if all those interested in commercial lighting could get an idea of the value of this unit it would be a most

excellent thing. If a store keeper could say to his illuminating engineer: "I want so many foot-candles of illumination on my goods," and no more than that amount is needed, the engineer could then go ahead and get it for him. At present one of the greatest difficulties with which the illuminating engineer has to contend is lack of knowledge of what illumination his client would like to have, and his client is not in a position to tell him, having no standard to go by. Let me, therefore, explain to you what is meant by a foot candle. If a point is at a distance of one foot from a candle, the illumination at the point has a certain definite value and this value is one foot-candle. An idea of this amount of illumination can readily be obtained by holding some printed sheet at a distance of one foot from the flame of the candle and at right angles to the direction and excluding other light. It will be found that it is an illumination not very great but still amply sufficient to read ordinary print with comfort.

For other purposes very different amounts of illumination may be required. For example, the minimum illumination on the ground for street lighting half way between posts is as low as 0.03 of a foot candle, while for show windows an illumination of ten to twenty foot candles is often used. For drafting about five foot candles is satisfactory, while on the counters of a dry goods store the illumination should be from two to four foot candles.

My excuse for the above discussion of a question by most of you considered technical, is that, in my opinion, it is a question which ought not to be so considered. Not only the engineer, but everyone interested in lighting should understand the difference between light and illumination, between the candle-power and the foot candle and should also have some concrete idea of the value of both these units.

And now returning again to the main question let me in closing once again urge the importance of checking waste by customers. The extra income obtained as the result of such waste is of the same nature as the saving in expense obtained by giving poor service. Both are of only temporary advantage, and either will ultimately be followed by a loss of a much greater amount.

Spectacular Lighting in Syracuse

A Carnival that Depends Upon Lighting for Success

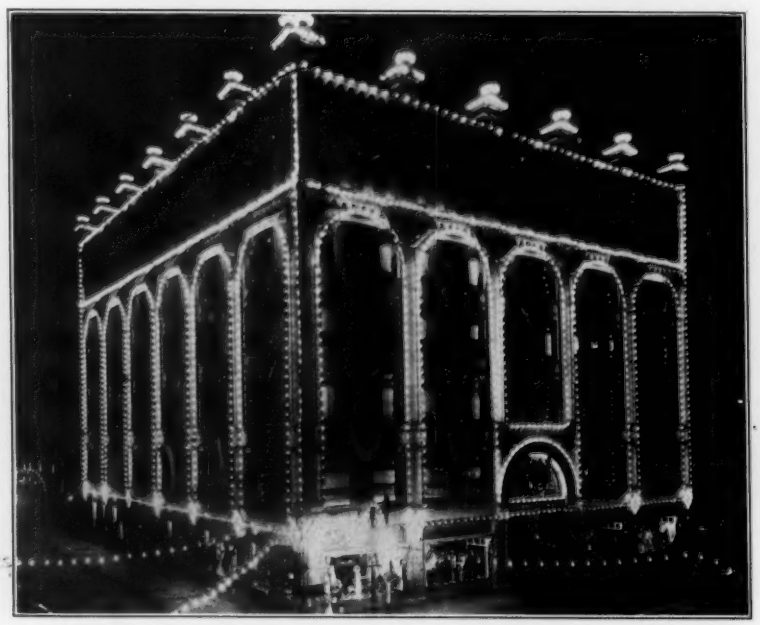
THE city of Syracuse, in September, celebrated its famous Ka-Noo-No Karnival. This year the central spectacle of the week was the portrayal of history and legends of the Hudson River; the various tales of Washington Irving being depicted by floats. There were water pageants, street parades, an Indian village, etc., and the city was crowded with visitors from all parts of the state.

The carnival is an annual function in Syracuse and a large amount of money is expended each year by the local merchants and business men, on special lighting. This year a Lighting Committee was appointed and with the assistance of the officials of the Syracuse Lighting Company and the Municipal Bureau of Gas and Electricity a great many brilliant and spectacular lighting effects were produced.

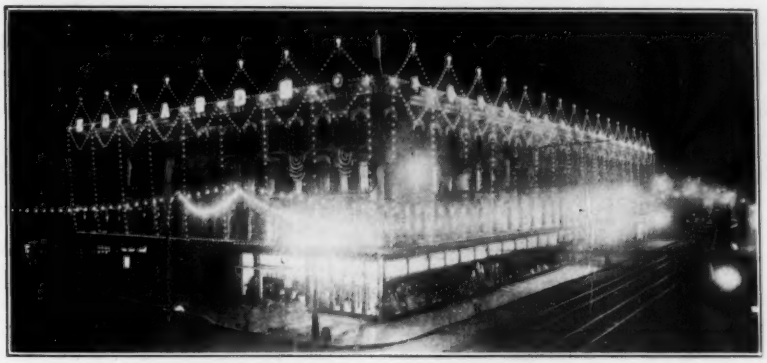
How extensive and well conceived and executed this general illumination was, is clearly seen from the photographs reproduced herewith.

The erection of the street arches was paid for by the city as well as the cost of current consumption during the carnival week. The expense of outlining and otherwise decorating the buildings in the business section of the city was borne by the merchants.

The view of South Salina street looking from Genesee is unusually



Carnival Decoration, Syracuse Department Store



Syracuse Department Store, Carnival Decoration

effective, as is some of the individual outlining. The rocket on the City Hall is a good, strong piece of carnival publicity for unless the throngs on the streets are infused with real rollicking carnival spirit, no popular celebration of this kind can succeed. There must be action, simple but spectacular, something to make the eye jump and the red blood run free.

The truth of this was abundantly proven at the Pan-American Exposition in Buffalo, where a steady financial loss was overcome, and record-breaking attendance obtained through the adoption of regular circus methods of advertising and the introduction of plenty of marching bands, "barkers" and gay bunting, to keep the crowds stirred up. The Syracuse rocket supplied the same sort of stimulus to the Ka-Noo-No crowds; it was good business. The city as a whole was a blaze of light and the success of the carnival justified the large amount of labor entailed.

It is hard to understand, however, why the greater part of this outline lighting construction was only temporary. The cost of installing permanent equipment is in comparison so little more than the expense of the special trims erected for a single carnival, that it would seem to be the part of economy and convenience for the merchants of Syracuse to have the work done once for all.

Every September the city is deco-

South Salina Street, Syracuse, Looking from Genesee, Decked for the Carnival

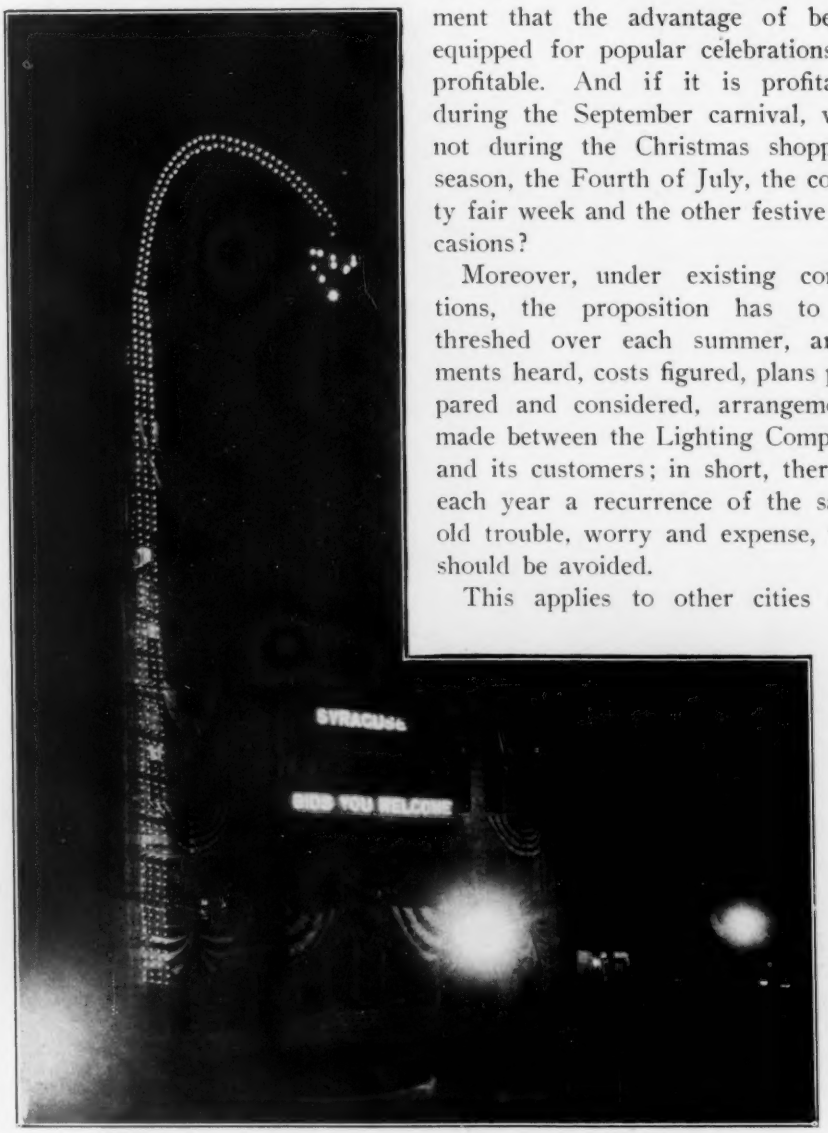
rated for the Ka-Noo-No festivities and from time to time there are other holiday occasions where, if it were possible without heavy expense, the merchants would be glad to outline their buildings and burn the special signs.

The Syracuse Lighting Company is making a strenuous effort to bring this matter squarely before their customers.

There is no question as to carnival illumination bringing good business. That the value of such advertising is appreciated is evidenced by this annual outlay for special lighting, which is in itself a sufficient argument that the advantage of being equipped for popular celebrations is profitable. And if it is profitable during the September carnival, why not during the Christmas shopping season, the Fourth of July, the county fair week and the other festive occasions?

Moreover, under existing conditions, the proposition has to be threshed over each summer, arguments heard, costs figured, plans prepared and considered, arrangements made between the Lighting Company and its customers; in short, there is each year a recurrence of the same old trouble, worry and expense, that should be avoided.

This applies to other cities and



Syracuse City Hall Carnival Decorations

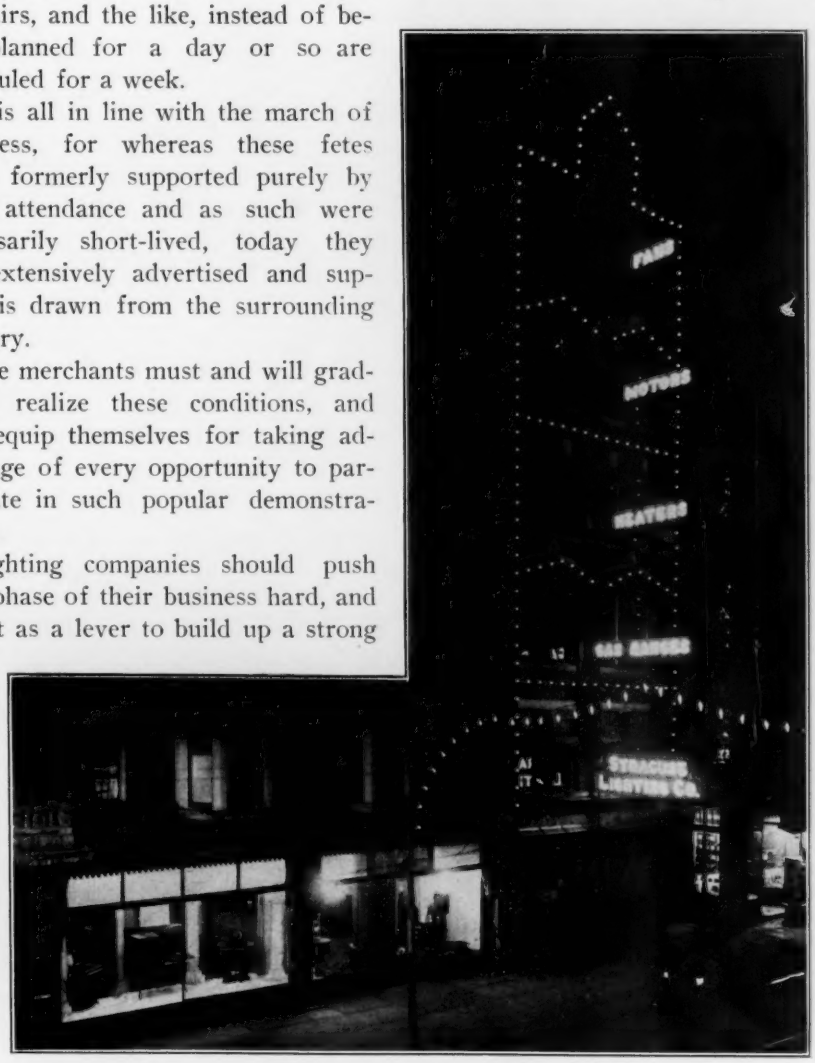
other central stations just as much as to Syracuse and the Syracuse Lighting Co., for in addition to the Christmas season and national holidays, every town of size, nowadays, has its local holidays when gala decorations are in order. The tendency of late years seems to be toward protracted festivity, and conventions, large food shows, Old Home Reunions, Carnivals, Founders' Anniversaries, County Fairs, and the like, instead of being planned for a day or so are scheduled for a week.

It is all in line with the march of progress, for whereas these fetes were formerly supported purely by local attendance and as such were necessarily short-lived, today they are extensively advertised and support is drawn from the surrounding country.

The merchants must and will gradually realize these conditions, and will equip themselves for taking advantage of every opportunity to participate in such popular demonstrations.

Lighting companies should push this phase of their business hard, and use it as a lever to build up a strong outline load. It is not necessary for a customer to burn all his display equipment steadily; in fact, it would be inadvisable to reserve nothing for demonstrations. The installation should also be in, however, ready for the throw switch and available not alone for the big festivals, but for Saturday nights and single holidays when desired.

If the value of such special illu-



Office of the Syracuse Lighting Company

mination is conceded and the fact that permanent equipment once installed is far less expensive than temporary construction often repeated, what is the answer? The lighting company has only itself to blame if the strength of this argument is not turned to good account.

A Dollar Idea

THE Brooklyn Edison Company, like practically every other lighting company that employs solicitors, supplies its representatives with plain printed cards bearing only the agent's name and connection. Mr. F. A. Wegner, one of the Brooklyn district agents, felt that in his territory such a card was inadequate. He therefore took his supply of cards to a printer friend, and had the following advertisement run on the back:

Tungsten Lamps should be placed near the ceiling and have proper Holophane Reflectors. Use Holophanes on all Incandescent Lamps.

For reading, writing and where light shines directly in the eyes, all lamps should be frosted or covered with a shade.

Place lamps high and concealed wherever possible.

Hide the sources of light, but INTENSIFY THE EFFECT by proper contrasts.

Twenty-two reasons why you should use Electric Power.

RETURN ALL BLACKENED INCANDESCENT LAMPS TO THE COMPANY.

LET WEGNER HELP YOU SOLVE YOUR ELECTRICAL PROBLEMS

While the copy used is not perhaps the best that could be written, the idea has proven a money-maker. Small merchants who would throw an ordinary card away, keep Wegner's, and write to him when they want anything electrical. In this way he hears of many little jobs of wiring and other contract work which he is able to distribute among the supply men, winning their friendship and co-operation. Not only this, but the suggestion implanted by the "ad" often starts the prospective customer to thinking, and results in much new business for the lighting company being developed that no amount of straight solicitation could develop.

News and Reviews

Current Items of Interest to Commercial Men

New Wireless Station

The new wireless station and plant now being erected at the Eiffel Tower in Paris will be the highest in the world, a little short of a thousand feet. It is expected that some marvelous achievements in wireless telegraphy and telephony will result from the use of this new mast.

Electrical Studies in Public Schools

During the coming winter the Philadelphia public-school board will conduct a municipal school of electricity, and Chief McLaughlin of the Electrical Bureau is having built a completely equipped laboratory for the use of the boys. The scheme of giving semi-weekly lessons in electricity includes instruction in the principles of arc lighting, incandescent wiring and lighting, the laying of cables, the construction and working of power plants and other branches of electrical work. In general, the plan is to help the youth of the city to a more practical knowledge than they can hope to obtain with the limited facilities afforded them in the schools.—*Western Electrician.*

A New Business Getter

The *Electrical Review* for September 26 describes a new department of the Boston Edison Company. On September first the Company opened an office giving free consultation to prospective lighting customers. The office employs a number of technical experts who are ready to take up with the prospective or old customer any lighting problem, giving free advice as to placing, number of, and candle power of lamps, explaining technical terms, etc.

While this department frequently advises fewer lamps or less current consumption than the prospect had in mind, the Company figures that this loss will be more than offset by the increased number of customers. Many people of small means are not willing to pay an expert for advice on house lighting and yet will not consent to install an imperfectly designed lighting system. The Boston Edison Company, of course, hopes to get many such people as new customers by putting in this free consultation bureau.

The Company has not, as yet, opened this department to factory owners, seeking motor drive advice, but may do so in the future. Such a bureau for manufacturers seeking advice, if successful at all, would save an immense amount of trouble, and would eventually give the Company an extremely strong hold on the factory and machine shop men.

The Fort Wayne Motor Drive Book

The Fort Wayne Electric Works have recently sent to the trade a handsome booklet entitled "Electrical Motor Drives Applied to Machine Tools" (Bulletin No. 111). The little book gives illustrations of Fort Wayne A. C. and D. C. motors and —what is more useful—interesting cuts of the motors attached to many different machine tools, tanning machinery, pumps and blowers.

The booklet is extremely well written, and the printing is a credit to the modest printer who omitted his name.

If you have not received a copy it will be well worth your while to send for the one the Fort Wayne people are saving for you.

Electric Drive at the Chicago Shoe and Leather Exhibit

To the casual visitor at the National Shoe and Leather Market Fair, recently held at the Coliseum, Chicago, the chief objects of interest were not the many shoes and leathers, but the electrically driven shoemaking machinery.

Three of the most prominent electrically driven exhibits were those of the Puritan Manufacturing Company, The Champion Shoe Machinery Company, and J. E. Bragg & Company.

The Puritan Manufacturing Company's exhibit was an excellent example of group drive, a number of sewing machines on a table being driven by a one-and-one-half hp. motor and shaft under the table.

J. E. Bragg & Company showed a new

electric automatic nailing machine which worked with marvelous rapidity.

A harness-sewing machine and shoe-repairing outfit consisting of a shoe-stitcher, an edge trimmer, an edge cutter, and a dust collector were shown by the Champion Shoe Machinery Company. The different machines were fitted with friction clutches and the whole outfit run by a one hp. motor.

The interest shown by the exhibitors and visitors at the fair in the motor-driven machinery showed that the shoe and leather field offers great opportunities not only to the manufacturer of electrical equipment, but also for the Central Stations, many of which are now supplying current to the Greek "Half-Sole-Your-Shoes-in-Twenty-Minutes-by-Electricity" repair shops.—*Electrical Review.*

Gas or Electricity?

The Electrical Review gives a rather interesting argument in favor of electric drive as against gas engines.

A factory installed one forty horse-power gas engine supplied with city gas and another one of the same size operated by a producer located on the premises. Both engines had to be used at all times to supply enough power to run the plant.

After a great deal of trouble from breakdowns, the manager had a thirty-five hp. electric motor installed on one floor and one of ten hp. on another floor, both supplied from the Central Station. These two motors, aggregating forty-five hp. ran all the machinery that had taken eighty gas engine hp. to run, and moreover, ran it better, smoother, and at far less expense.

Wrecking by Electric Cranes

Curious crowds can now be seen on the streets surrounding the old Chicago City Hall, taking their last look at the famous old pile now rapidly being demolished by William J. Newman, with the aid of electric boom hoists which take massive blocks of stone, one by one, tear them from the places they have so long occupied, some of them with none too secure a tenure, and lower them gently and tenderly back to terra firma whence they were quarried so many years ago.—*The Electric City.*

Seeing by Wire

The Electrical Review reprints from the *Umschau* (Berlin) a rather technical description of a new instrument for seeing objects at a distance. This system, recently devised by M. Armengaud, the well known president of the French Aeronautical Society, makes use of the property of selenium of changing its conductivity according to the intensity of the light rays striking it. It is claimed that the new device works well, all of the numerous difficulties attending its perfecting having been overcome.

The Paris Fire

The disastrous fire which destroyed the Paris central telephone exchange is to be sincerely regretted by every electrical interest. While the foreign and suburban service is now handled by the other exchanges in the city and city calls can be made from the public booths, it will be fully another month before the service in offices can be resumed.

Watch this New Discount

A queer petition is that recently presented against the Dallas (Tex.) Gas Company to the local gas commission by a feminine customer, asking that the Company be required to give her the customary reduction of 10 cents per thousand cubic feet. She contends that if the prompt payment rebate is legal and sound, she is entitled to a greater rebate than the 10-day consumer, since she pays in advance through the agency of a prepayment meter.

Mackie Takes On More Work

The Springfield (Ill.) News has engaged Mr. A. D. Mackie as manager. Mr. Mackie has been, and will remain advertising manager for the Peoria Gas and Electric Company and the Utilities Company of Springfield.

New Company Branch of the N. E. L. A.

The Brooklyn Edison Company has formed a company branch of the National Electric Light Association. A meeting of the employes of the company was held on September 28 to discuss the matter of joining the association. The meeting was addressed by W. F. Wells, the General

Superintendent of the company, and by W. W. Freeman, the General Manager.

About 150 men have joined the association as a result of the meeting. The following officers were elected: President, G. S. Knight; vice-president, D. D. Sharkey; secretary, E. A. Baily; treasurer, Irving Bugg.

A Large Installation of Electric Drive

In its October issue *Electric City* gives an interesting account of the electric drive in the iron and steel machinery plant of Joseph T. Ryerson & Son at Chicago. The Ryerson people have the largest iron and steel warehouses in the world, covering about 625,000 square feet, exclusive of offices, dining rooms, club rooms and yardage.

Have You Seen the Man in the Immaculate Shirt?

The "Hoffman House Man" is again walking Broadway 'o nights. He is a well groomed fellow in faultless evening clothes and neat brown ulster, carelessly thrown open, displaying a broad expanse of spotless shirt-bosom. As he strolls, hands in pockets, toward you, in all probability you glance rather admiringly at him, when "Hoffman House Cigar" flashes, brilliant red, in your face.

The man in the immaculate shirt, who is good at the game, passes on without noting your surprise. You may murmur "stung again" and pass on, but "Hoffman House Cigar" is burned deep on your brain, which is, after all, the only end desired by the "spotless man" and his employers.

A New York Sign Stunt

The New York Edison Company caused more or less comment during the Electrical show by putting on the streets one of their big grey supply autos bearing a large electric sign advertising the show. The car was run on Broadway and the other principal "night" streets. The sign was, of course, run from storage batteries, presumably the same ones that furnished the motive power for the auto.

Electrocuting Eels

A recent run of eels in the rivers and creeks in the section of northern California, near Ukiah, is said to have exceeded any known in years. The canal built by the Snow Mountain Power Company, from its power houses in Potter Valley, swarmed with them, and they piled up at the power station in a manner that threatened to clog the wheels. There seemed to be no way of getting rid of them until electricians sunk a large meshed piece of wire netting in the canal where the eels congregated, and when it was well covered, turned several thousand volts into it. The eels were then gathered up, hauled away and buried. Several wagonloads of them were killed, according to the account. The Fish Commissioners are particularly interested in this method of killing eels, as they are one of the greatest destroyers of young trout known.—*Electrocraft.*

The Greatest Sight in Windsor Castle

"The pride of the ancient guide who shows Summer tourists through Windsor Castle is not that ancient pile itself, not the masterpieces of paintings, not the bed that has contained this or that royal personage, but the electric lights now in the castle," said a tourist who returned from abroad last week.

"People may see the inside of the castle for a shilling a head. All Summer they go there in droves. They are admitted in parties of about twenty, who are taken in charge by a leaden-lidded guide. He seems to be always upon the point of going to sleep. Slowly and drowsily, so that the words get transmuted one into another, and it is not always easy to tell, for instance, whether King John or Joan of Arc wore that particular suit of armor on the wall, he drones a list of the things to be noted. His listless figure contrasts strangely with his alert tourists. He lifts an arm in the direction of the bed:

"'Slept in—Queen Victoria—beautiful bed—the cover was made by the hands of Princess Um-um-um herself.'

"He lifts an arm in the general direction of a wall, but never lifts his eyes, saying:

"'Beautiful picture—Rembrandt—old—very old. Clock on the mantelpiece made in year 989—presented by ladies of London—King Ugh—Ahem—beautiful clock—very old. Large table in the centre—given by the city of Manchester—King—'

"But he coughs, and the name of that fortunate King is lost.

"Then suddenly the guide's figure undergoes some magical transformation. His shoulders begin to straighten. He is alert as any tourist. You can almost see him swell. His eyes open. They shine. He moves quickly to a corner of the room. He snaps a button. The bulbs in the chandelier shine with electricity. He says, with boasting in his tone:

"'And the room you will observe, is lighted by electricity.'

"Then he subsides. His lids droop over his eyes. His erect figure almost disintegrates. He shambles into another room, and goes over the same program. In every room he switches on the electric lights as a climax to all he has to say about the paintings, the beds that Kings and Queens have used, the banners won by Wellingtons and Marlboroughs, the ancient council tables around which the destinies of nations have been decided.

"If it weren't for the electric lighting plant, life in the castle wouldn't be worth living to that guide; it certainly wouldn't be worth talking about. He doesn't say that the lights are 'old, very old.' His manner says for him that they are the final touch of glory upon the castle, and that he needs only turn on the switch and observe the awe that is stricken into the hearts of touring Americans.

"If information is asked about these wonderful lights, the guide says they came with King Edward. Queen Victoria never would tolerate 'em, preferring the old-style candles."—*The New York Times.*

Destruction in Wooden Electrical Poles

(From the *Electrical World*)

The United States Bureau of Forestry reports that birds are destroying the telephone and telegraph poles in the South and Southwest, particularly in Texas, Arizona and California. In some places 50 per cent of all the poles along the right-of-way have been riddled by these innocent offenders, which belong to the woodpecker family. One of the Western Union officials, who has recently returned from an inspection through the West, reported having seen 25 telephone poles with 200 or 300 holes drilled clear through them. Some of the holes were three inches or four inches in diameter. An officer of the Illinois Central Railroad counted the white cedar telephone poles along the right-of-way near Covington, Tenn., which had been affected by woodpeckers, and found that out of 268 poles, 110, or 41 per cent, had been bored.

In some cases, destruction of the pole takes only a few months, and the weakened condition makes it dangerous for a lineman to climb the stick. The real object of the birds in drilling the holes is uncertain. One telephone man stated that the humming of the wires was mistaken by the birds for insects excavating beneath the surface of the wood, and that they drilled the poles in quest of these imaginary insects. It is very probable, however, that the holes are excavated for an entirely different purpose. The woodpecker is a provident bird. At the proper season it stores up a supply of acorns and other foods for future consumption. In the summer these holes are often found stored with acorns.

Many methods for preventing this damage have been suggested, but probably the most successful is preservation with creosote. A line of creosoted poles, opposite the one near Covington, was examined, and not a single hole was found. When it is considered that creosote will not only prevent the damage caused by the woodpecker, but also protect the pole indefinitely aginst both insects and decay, its great value as a preservative is apparent.

The Forest Service has spent considerable time in developing a cheap yet efficient method for the treatment of telephone and telegraph poles. The results of the work are embodied in several forest service circulars, copies of which may be obtained without cost from the Forester, Washington, D. C.

Waterbury Launches Campaign

The Connecticut Co., of Waterbury, is taking up commercial work more aggressively and has just added a new power man to its sales force. Mr. S. B. Burroughs, the general agent, is planning to put a number of new business-getting ideas into effect at once.

What's in a Name?

Thomas D. Hoxsey, secretary of the bureau of gas and electricity Public Service Commission of New York, is wondering why a large proportion of the persons who wrote him complaining of the gas service speak of the "Gas Meteor."

Whether there is a tendency on the part of the New York gas consumers to refer to the "Meteor" as indicative of the meter's speed or whether it is simply an orthographical error seems hard to determine.

Mr. Hoxsey likes to believe, however, that no reference to the speed of the meter is intended.

A number of the ways "Meter" is misspelled in complaint letters received by the bureau has been compiled by Mr. Hoxsey: Mater, Matter, Mattur, Meader, Meather, Meathur, Meater, Meator, Meatr, Meatur, Meder, Meether, Meetter, Meidor, Mentor, Meoter, Meotor, Metar, Meteer, Metere, Meterr, Mether, Metor, Metore, Metre, Metrer, Mettor, Mewter, Mieter, Mietor, Miter, Mither, Mitor, Mitter, Mittor, Motter, Moture, Mucter, Mutor, Muttor, Neotor, Neter.

The Electric Iron Profitable on Piece-Work

Popular Electricity tells the story of a London laundryman who, wishing to install electric fans throughout his establishment, found a strong sentiment against the "new-fangled things with strings on 'em."

He finally persuaded several of the women, who were working "by the piece" and more bold than the rest, to try the irons.

With the necessity of changing from a cold to a hot iron every few minutes removed and the resultant saving in time, the women found that they received considerably more money than when working with the old irons.

The manager, of course, had won his point and met with no further opposition to the installation of the electric irons.

A. I. E. E. Catalogue of Wheeler Gift

The bibliographical catalogue of the books, pamphlets and periodicals of the celebrated Latimer-Clark collection presented by Dr. Schuyler Skaats Wheeler to the American Institute of Electrical Engineers, has just been completed and is about to go to press. This critical catalogue has been in preparation for the past six years, under the direction of Mr. W. D. Weaver, with the collaboration of Brother Potamian of Manhattan College, and a number of other authorities here and abroad. The expense of this unique work has been defrayed by Mr. Andrew Carnegie. As soon as the book comes from the press, it will be distributed to the members of the Institute, who, according to the deed of gift of the Library, are entitled to the Catalogue.

Commercial Gas Association Convention

The annual Convention of the National Commercial Gas Association will be held in Chicago, December 8th, 9th and 10th in the First Regiment Armory. Coincident with the meeting will be held the Annual Exhibition of Gas Appliances.

The program of papers tentatively announced includes:

"Advertising of a Public Service Corporation," by E. St. Elmo Lewis, Detroit, Mich.
"Selling Gas During Depression," by Frank A. Williard, Rochester, N. Y.
"Exhibition of Appliances a Necessity in Purchasing," by Henry L. Doherty, New York City.
"Complaint and Application Departments with New Business Department," by A. von Dachanhausen, Butte, Mont.
"Records For a Commercial Department," by Charles M. Cohn, Baltimore, Md.
"Methods of Increasing Gas Sales in a Small Town," by Glen R. Trumbull, Lebanon, Pa.
"Demonstration Work," by Mrs. Helen Armstrong, Chicago, Ill.
"Compiled Record of New Business Methods," by George Williams, New York.
"Qualifications For a Solicitor."
"Pushing Gas and Electricity Under One Control."

Each of these papers should prove of as great interest to the central station new business men as to the gas men, not alone because it is well to know the other fellows' plans and methods, but because commercial gas methods and commercial electrical methods are very similar and successful gas plans can be adapted to Central Station needs with very little change.

The "Record of New Business Methods" by Mr. Geo. Williams will be a very complete book on commercial practice. Mr. Williams is known equally as well in the electric and gas fields as commercial manager in charge of the numerous plants controlled by Henry L. Doherty. The

book is published by subscription and any central station commercial manager who fails to secure a copy will be overlooking an opportunity to familiarize himself with the most up-to-date methods in vogue among gas and combination gas and electric companies.

Electricity With the Doctors

Professor Bier of Berlin is experimenting with an electrical knife for surgical use, a description of which is given in the *Electrical World*: To one end of a 6- by 8-inch rod, through the center of which passes a conducting wire, is fastened the blade without a cutting edge, of a form similar to that of the commonly used surgical knives or like the simple probe. A high-frequency current is employed, and, when this is turned on, a noiseless spark half an inch long appears from the point of the knife or probe. The spark incises the soft tissues with the same ease as a hot knife goes through butter.

Apparently there is no cauterization of the wounds, in fact there is a freer hemorrhage than with the ordinary knife. It is claimed for this electrical knife that no sterilization of the wound is necessary, that the healing process is more rapid than after operations performed with the common knife, that it cuts very quickly and easily, requires no sharpening, and is very easily cleaned.

Another despatch in the same magazine states that Dr. Louise Rabbinovich, a young American woman working with the Pasteur Institute of Paris, has been doing wonderful experimental work with electricity as an ænesthetic. It is claimed that insensibility produced by means of interrupted currents of electricity has absolutely no effect on the action of the heart.

Narragansett Newspaper Ads.

The Narragansett Electric Lighting Company, of Providence, inaugurated a strong newspaper advertising campaign on September 1st. Ads. appear in all Providence papers, four in number, and the purpose of the company throughout the campaign will be to describe and point out the advantages of the many different conveniences and labor saving devices available for household use. The ads. are marked by a peculiar use of rule border and unique display of the Narragansett Company's name, which causes them to stand out prominently on the page.

Chicago Display Room

The Commonwealth Edison Company of Chicago is making plans for opening a large and complete display room fully equipped with electric appliances. The plans have not been completed, but it may be safely taken for granted that the new room will be among the best central station display rooms in the country.

Electric Brewing

The Anheuser-Busch Brewing Association, in manufacturing beer at their St. Louis breweries, employ 446 d. c. motors, aggregating 4,747 h. p. About 900 more h. p. will be required in addition to this to complete the electric drive of all the machinery.

Valuable Wire Data

The New York Insulated Wire Company's price list No. 22, recently issued, contains some valuable ready-reference rules and formulae. It is a small booklet of convenient pocket size, sensibly arranged so that anyone can easily get at the data published.

Stone-Webster Publicity

Messrs. Stone & Webster of Boston have recently engaged Mr. Barrett Smith to take charge of the publicity interests of their organization. A definite publicity policy will be adopted, and the work carried on by a special department, under the supervision of Mr. Smith.

Mr. Smith is an engineer by education and training and has done considerable writing for the engineering and popular press.

Pennsylvania Association

An Electrical Association of 45 Companies has just been formed in Pennsylvania. The organization was perfected at a meeting at Eagles Mere, Penn., and the new association constitutes the first State branch of the National Electric Light Association applying for membership under the new by-laws.

Scientific Fixtures

The Tungstolier Company of Cleveland, Ohio, is opening a large number of branches throughout the country and is selling scientific fixtures direct to the user.

SELLING ELECTRICITY

Published monthly by Frank B. Rae, Jr. Earl E. Whitehorne, Managing Editor. Editorial and Advertising Depts.: 74 Cortlandt Street, New York City. Telephone 2314 Cortlandt,(Private Branch Connecting all Depts.) Publication Office: American Building, Brattleboro, Vt.

NOTICE.—Advertisements, Changes in Advertisements, and Reading Matter intended for any month's issue should reach this office not later than the fifteenth of the preceding month.

Entered as second-class matter, February 28, 1908, at the Postoffice at Brattleboro, Vermont, under Act of Congress of March 3, 1879.

Vol. IV. OCTOBER, 1908 No. 3

Do Your Share

Every day or so I receive a letter or two like this:—

"My dear Rae:

"I want to congratulate you on your last issue of SELLING ELECTRICITY. The article on ——— was particularly good and has helped me greatly in my work."

Such letters are gratifying, to be sure, and coming—as they generally do—from men at the top of the central station ladder, they are mighty encouraging. But letters, after all, are only letters. One cannot spend them or bank them or pay the printer with them. They serve the one purpose of keeping your editor alive to his responsibilities—but there they stop.

Now, I have pointed out before that a trade paper is a three-cornered partnership between the publisher, reader and advertiser. The publisher gets out the best magazine he can in order to win readers; the reader appreciates the publisher's efforts and responds with his dollar-a-year; the advertiser pays money for space to reach those readers; the publisher spends the advertisers' money to make his paper better, larger, more influential and of interest and value to more readers—and so it goes in an endless circle.

SELLING ELECTRICITY is not as good as it ought to be nor as good as it's going to be—but it's as good as I can afford to make it until I get more readers and more advertisers. The more readers will come if the present readers will tell other Central Station men how good the paper is instead of telling me. The advertisers will come if the present readers, even, will answer the ads and say where they saw them. That is your part in the three-cornered partnership.

Do your share.

HIGH CLASS MAN WANTED

I am looking for an ambitious man who has "made good" as a Central Station Solicitor and who wants to advance—one who has specialized in commercial and sign lighting preferred. Correspondence confidential.

THE TUNGSTOLIER CO.,
227 Fulton St., New York City.

BUY BUCKEYE TUNGSTENS *Now*
B-E-C-A-U-S-E

Buckeye Tungstens are skillfully, carefully and honestly made.

Buckeye Tungstens are long of life and constant in service.

Buckeye Tungstens were reduced 10% in price on September 1st.

BUCKEYE ELECTRIC CO.
CLEVELAND, OHIO

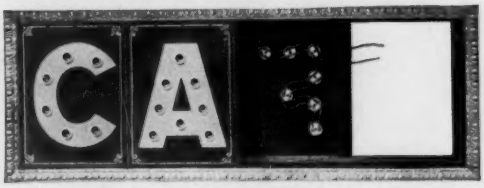
Tungsten Unit Fixture

For use on high ceilings with 60 and 100 watt lamps; 14 inches in length over all. A fixture of unusual beauty and quite inexpensive. Any finish desired.

Write for Bulletin 287.

Federal Electric Company

Lake and Desplaines Streets, Chicago



Our Sectional Letter Sign

Porcelain enamel white letters on royal blue or black background

For signs like this one, returned free of expense to us in good condition after one or two years' use, we refund a liberal percentage of their first cost.

Haller Sign Works (*Inc.*)

319-320 S. Clinton Street

CHICAGO

Schaum Engraving & Printing Co.

Successors to **Clark** Engraving & Printing Co.

Get acquainted with this sign and name.
It means Good Publicity.
Expert service for the busy manager.
Let us tell you of the plan of the

Schaum Service

Flexible—Individual—Effective

We furnish ideas. We develop ideas.
We design. We illustrate.
We engrave. We print.

SCHAUM ENGRAVING & PRINTING CO.

CHARLES W. LAMB,
Manager Publicity Service.
Formerly in charge Publicity Bureau
The Milwaukee Electric Ry. & Lt. Co.

Successors to CLARK ENGRAVING & PRINTING CO.

MILWAUKEE

I stand the expense!
I do all the work!
You increase your sign load.

S U C C E S S

R U S S E L L

All I ask of you is a list of your sign prospects.

I will sell them direct.

J. L. RUSSELL
AMERICAN ELECTRIC SIGN CO.
41 High St., Boston, Mass.

Mr. Consumer:

When you buy Lamps

Buy G. I. Lamps

Best Lamps
Lowest Prices

The General Incandescent Lamp Co.
Cleveland, Ohio

Cincinnati Office: 225 E. 4th St.
San Francisco Office: 403 Atlas Bldg.
Seattle Office: 223 Colman Bldg.

ELECTRIC SUPPLIES TELEPHONES NOVELTIES

Catalog of 200 Free. If it's Electric we have it. Big Catalog 4c

OHIO ELECTRIC WORKS, Cleveland, Ohio

The World's Headquarters for Dynamos, Motors, Fans, Toys, Batteries, Belts, Bells, Lamps, Books.

We Undersell All **We Want Agents**

THE Electric Chafing Dish

will be used when the hostess is entertaining her friends. That means that in the course of a season she will give any number of people in her own social set — often her neighbors — a demonstration of electric cooking. On such occasions every feature of the chafing dish comes in for its share of interest and criticism. Then the practical features of the Simplex count for much—dish and stove separable, the former easily removed for cleaning, the latter useful alone for toasting, the three-heat switch, the attractive pattern and the high quality and finish—all these things will be seen and remembered by people who are able to buy for themselves. There is no better appliance for teaching electric heating than the chafing dish and no better chafing dish than the Simplex to use as an example.

SIMPLEX ELECTRIC HEATING CO.

Cambridge, Mass.

Monadnock Building, Chicago

HOW TO ADVERTISE A RETAIL STORE

BY ALBERT E. EDGAR

TEACHES

How to lay out advertising copy,
How much space to use,
How to design an attractive space-saving name-plate,
What a headline should accomplish,
How to get and use proper illustrations,
How to write your advertising introductory,
How to describe an article so as to make sales,
What style and method of pricing you need,
The preparation of effective, free advertising,
How to find and properly use selling points,
The making of store papers, booklets, leaflets, folders, advertising letters, and mailing cards,
The organization of a follow-up system,
The uses of calendars, blotters, post-cards, advertising novelties, package enclosures, and hand-bills,
Proper methods of window advertising,
Correct outdoor advertising,
Spring, fall and other openings advertising,
Two-hundred-fifty selling helps, guessing and voting contests, drawings, schemes to attract boys and girls, premium schemes,
The sensible advertising of special sales and clearance sales,
The uses of leaders and bargains,
Many novel sales plans,
The promotion of business in a number of specific retail lines—this department alone occupies about 100 pages,
Mail order advertising and general advertising,
Points about type, borders, ornaments, and cuts,
Nearly 20 pages of practical and helpful hints on how to lay out advertising copy,
How to read proof and technical terms.

How this is done is demonstrated by the use of

641 ILLUSTRATIONS AS MODELS

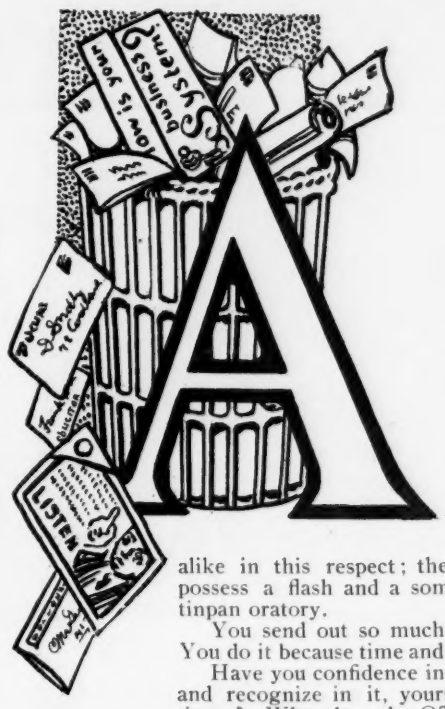
Showing how all these things are accomplished by the highly paid ad managers and the cross-roads storekeepers

Price $3.50 Postpaid—on a money-back basis

THE OUTING PRESS, DEPOSIT, NEW YORK, U. S. A.

In writing to advertisers, mention "Selling Electricity."

WHERE THE POWER COMES FROM



A CENTRAL STATION MAN the other day dropped the remark that electrical advertising was so much alike the only way he could tell the difference between campaigns was to "look at the lamps."

Then he pointed to the waste basket.

Uncle Sam's morning mail had given it a busy and prosperous appearance. It was brimming.

Pamphets, booklets, form letters, mailing cards and folders were in the discard. One glance through them illuminated the subject; there was a sameness, a monotony—a sort of "cold-gray-dawn-of-the-morning-after" repetition.

Because an idea happened to be obvious without extra brain-energy, it was popped on to paper and Fate seem to ordain that every other man had the same impromptu plan, or picture, or line of thought.

The power in any piece of publicity comes from its originality—from the "spark" in it. The same thing is true of electric lamps. The market is flooded with "Just lamps"; but the one that makes a Broadway glitter has an extra "spark," you'll find—and that's the lamp that does business.

Men, lamps, and advertisements are much alike in this respect; they've got to rise above the common-place; must possess a flash and a something that means genius, not clothes, type, and tinpan oratory.

You send out so much publicity print and picture each year, don't you? You do it because time and trade have proven the vital necessity and good of it.

Have you confidence in this postage-eating process? Do you read it over and recognize in it, yourself, something in keeping with the spirit of the times? What does the OTHER MAN think of it?

The Ethridge Company likes the preparation of copy and designs of this nature for YOUR business in a way that a conscientious student likes his problems—they fascinate him with their possibilities. If it's a lamp fixture or a coil of wire, our force wants to prick them and see the red blood flow; in short, desires to "get next" to the essential parts and features before a line is written or a stroke is drawn.

This is not only common sense, but it is business judgment. It makes the Ethridge Company broad in its views, experienced in its handling of many subjects, and practically valuable to the concern for whom it is working.

If you want copy or designs that have the "spark," if you want the publicity that "rings true" from the intelligent interpretation of the problem, drop in, by person or pen. You'll find that we don't illustrate electric light or power ads with pictures of East India Fakirs, and we do not dodge commercial facts by cloaking copy in everything from Ben Franklin to the Congressional Record.

We write and draw YOUR business.

GE

THE ETHRIDGE COMPANY

41 UNION SQUARE, NEW YORK CITY

Face to Face with OPPORTUNITY

Electricity controls more trades, directs more men, offers more opportunities, than any other power that man has yet discovered. A knowledge of electricity makes those opportunities yours. It opens to you new fields, gives you new ideas, keeps you abreast of the times. You can get that knowledge by ***home study,*** during your spare time, from the

CYCLOPEDIA OF APPLIED ELECTRICITY

NEW SIX VOLUME EDITION JUST OUT

5,000 Pages, 7 x 10 Inches, Bound in Half Red Morocco. 500 New Pages — Innumerable New Ideas.

Treats in detail every practical, up-to-date electrical appliance. Every subject mentioned below presents a new opportunity; every page tells you how to grasp it and profit by it. It is written so simply and clearly, and is so comprehensive and authoritative, that you will find it ***full of opportunities for you,*** whether you are already an expert electrician, or a young man just learning a trade.

Each section is written by an expert, illustrated by special drawing, diagram or photograph, simplified by tables and formulas, proved by practical test questions, and carefully indexed for ready reference. To introduce our correspondence courses, from which the Cyclopedia was compiled, we make this special 30 day offer.

$18.00 Special Price **Regular Price $36.00**

Absolutely FREE for 5 days' examination. Sent, express prepaid, on receipt of Coupon. If you want the books, pay us $2 within 5 days and $2 a month until you have paid the special price of $18.00; otherwise return them at our expense.
We employ no agents to annoy you.

Some of the Subjects Treated

Electric Wiring — Electric Bell Wiring — Electric Telegraph — Wireless Telegraphy — Telautograph — Theory, Calculation, Design and Construction of Generators and Motors—Types of Dynamos and Motors—Elevators—Direct Current Motors—Direct-Driven Machine Shop Tools—Electric Lighting, including Arc and Incandescent Lighting—Nernst Lamp, Cooper-Hewett Lamp, Osmium Lamp, Etc.—Electric Railways, including Third-Rail System, Multiple-Unit Control, Electro-Pneumatic Control—Alternating Current Motors, Etc.—Single Phase Electric Railway—Electric Welding—Mercury Vapor Converter—Management of Dynamos and Motors, including the Location and Remedy of Troubles, such as Sparking at the Commutator, Heating, Etc.—Power Stations—Central Station Engineering—Central Station Design—Storage Batteries, including Charging and Discharging, Troubles and their Remedies, Tests for Impurities, Etc.—Power Transmission—Alternating Current Machinery, including Alternating Current Generators—Synchronous Motor, Induction Motor, Transformer, Rotary Converter, Frequency Changer, Etc.—Telephony, including Instruments, Lines, Exchanges, Common Battery Systems, Operation, Maintenance — Automatic Telephone — Wireless Telephony — Telephone Line Protection—Telegraphone, Etc.

CUT OUT COUPON HERE

Sell. Elect. 10-08
A. S. of C.
Please send Cyclopedia of Applied Electricity for FREE examination. I will send $2.00 within five days and $2.00 a month until I have paid $18.00; otherwise I will notify you to send for the books.

Name.....
Address.....
Occupation.....
Employer.....

AMERICAN SCHOOL OF CORRESPONDENCE
DIV. 183, CHICAGO

Sell What the People Want to Buy

THERE is a constant trend of the public mind toward better taste in lighting fixtures and portables, toward a realization of the beauty of simple, graceful lines.

The public is breaking away from the clumsy, over-decorated brassware that delighted tinsel-loving minds of a few years ago.

Are you taking advantage of this turning toward true, simple beauty and good craftsmanship?

Do you realize the popularity of the well-made, simple, graceful—yet sturdy, **Miller** portable lamp?

Don't you think you might as well sell what the public wants?

Look at this Example

Note its graceful lines
—its *simplicity*.

Our catalog tells more about it and others.

Edward Miller & Company

Meriden, Connecticut

THE NEW Electrocraft Illustrated List *of* Officially Approved Electrical Supplies

is now in preparation and will shortly be issued.

The publishers make the further important announcement that in view of the extraordinary influence exerted by this unique publication in promoting National Code construction practice, and for the purpose of giving the widest possible extension to its field of activity, it will hereafter be distributed

Absolutely Without Charge.

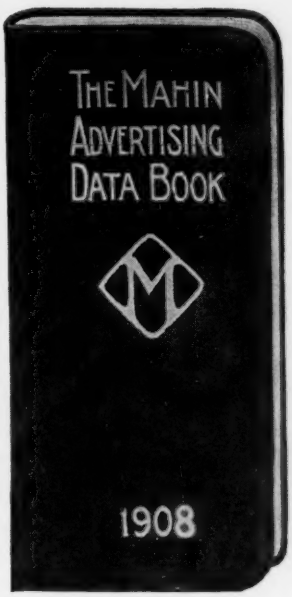
The new Electrocraft Illustrated List is a vast improvement on the old publication. The pages have been greatly enlarged to allow of fuller description and finer representation of the different lines of material; and in paper, type and illustration the new list will be a beautiful example of the printing art. In it will be found *everything electrical* that has successfully passed the tests of the Underwriters' Laboratories and that should be used in National Code construction work; and all clearly described and strikingly illustrated.

The revised National Electrical Code, with many finely made cuts and drawings illustrating the application of the principal rules will continue to form an interesting and highly valuable feature of the book.

POSTSCRIPT IMPORTANT: The mailing list is now being revised. In order to avoid the omission of names and to ensure perfect accuracy in the addresses, all persons wishing to receive copies of the new list are requested to write the publishers at once. In all cases, the letterheads of the applicants must be used in order to gain attention.

Electrocraft Publishing Co., DETROIT, MICH.

Do You Ever Want to Know



The size of a billboard poster?

The size of a street car card?

What Poultry, Farm and other papers are published in a given state or locality?

How to correct proof so the printer will understand?

The number of words in a square inch of type?

What 10-point type—or any other point—means?

How advertising space is measured—in newspapers or magazines?

The width of a column—in newspapers, magazines, mail order papers?

What kinds of type you want to use?

How population is distributed by states?

The average wages of a given class of people?

Number of Dealers in various lines, by states?

A date—for this year or next?

The cost of advertising in any publication?

Or on billboards?

Or street cars?

Lists of Publications—daily, weekly, monthly—papers, magazines, religious, agricultural, mail-order, etc.—rates—dates of closing advertising forms—width of column—etc.

The MAHIN Advertising Data Book

TELLS all the above and many other things—and you can have it *with* you, *all* the time, in your *vest pocket*—to consult to your profit at odd moments. It is a beautiful little volume of 556 pages on India paper, gilt edged, bound in red morocco, flexible covers, gold stamped.

The Mahin Advertising Data Book is worth more than the price—but in addition you will receive:

Five Addresses *by John Lee Mahin*

Advertising the Highest Form of Commercial Achievement—delivered before the University of Michigan.

The Basis of Advertising—delivered before the Pacific Coast Advertising Men's Association.

The Commercial Value of Advertising—delivered before the College of Commerce and Administration of the University of Chicago.

The Purchaser's State of Mind—An Essential of Value—delivered before the University of Illinois.

Who Pays for the Advertising?—delivered before the International Advertising Association.

And a Sample Copy of THE MAHIN MESSENGER

If, after ten days you would like to keep all of the above and be put upon our list to get The Mahin Messenger eleven more times, then just send us $2.00 and the literature is all your own. If you do not want the Data Book, the lectures and the Messenger, return them and you owe us nothing. We reserve the right to withdraw this offer.

MAHIN ADVERTISING COMPANY
823 American Trust Building, Chicago

S. C. DOBBS, Sales Manager, the Cocoa Cola Company, Atlanta, Ga., says: "I could not properly run the advertising end of this business without The Mahin Advertising Data Book."

CUT ON THIS LINE

MAHIN ADVERTISING COMPANY
823 American Trust Bldg.
CHICAGO

Gentlemen:—Please send me on ten days' free trial—

1—The Mahin Advertising Data Book.

2—The Mahin University Lectures.

If after 10 days I would like to keep the same, I will send you two dollars, and you are to send me The Mahin Messenger for 1908 without further cost or action on my part.

Name.....

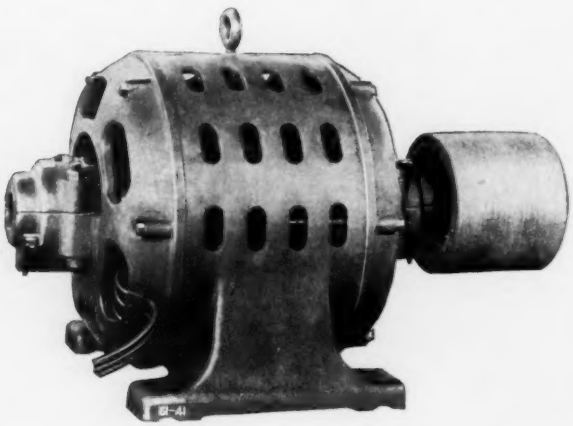
Address .....

Wagner Electric

Manufacturing Company, St. Louis, Mo.

Polyphase Motors

In general design, Wagner Polyphase Motors conform to the accepted practice of the best builders the world over, but in demonstrable ruggedness they are quite unapproachable by other motors. The tendency toward less material and fewer finished surfaces, for instance, has been accepted only in so far as it is of genuine advantage to the user.



Wagner Squirrel-Cage Motors have greater starting torque in proportion to starting current than any other squirrel-cage motors offered in this country.

Correspondence invited. **Address the nearest office:**

Atlanta, Ga. Empire Building
Boston, Mass. 110 State Street
Chicago, Ill. Marquette Building
Cincinnati, O. First National Bank Building
Cleveland, O. New England Building
Kansas City, Mo. Dwight Building
Los Angeles, Cal. 210 So. Los Angeles Street
Minneapolis, Minn. Security Bank Building
New York, N.Y. 50 Church Street
Philadelphia, Pa. Real Estate Trust Building
Pittsburg, Pa. Farmers' Bank Building
Portland, Ore. McKay Building
St. Louis, Mo. 6400 Plymouth Avenue
San Francisco, Cal. Balboa Building
Seattle, Wash. Pacific Block
Sioux City, Ia. 515-517 Fifth Street
Montreal, Canada. Bell Telephone Building

ARE YOU LOOKING OUT FOR THE MAIN CHANCE?

WHAT kind of a success would electricity be, anyway, if it didn't sell—if it didn't have the men in the Central Station field to push it? ¶What kind of a success will you rate yourself if you don't get more customers for your company this year than you did last? ¶Take yourself and your profession more seriously. There's a big future for any man with brains and pluck in the electrical field who will study how to sell current. ¶Your main chance is to become a better business-getter. Let ***Selling Electricity*** help you get on in life. This magazine is the only central station publication devoted to the main chance—to the selling of more electricity. It is the only magazine where the best and most successful ideas for selling electric light, heat and power are printed every month from all over America. Every issue contains hundreds of ideas that will help you succeed in your field, in any field—help you earn more salary. ¶Send in your dollar to-day and take no more chances about letting any good ideas get by you. :: :: :: :: :: ::

TEAR OFF ON THIS LINE

FRANK B. RAE, Jr.
Publisher
74 CORTLANDT ST., NEW YORK Date.....

Gentlemen:—

Find pinned to this coupon one-dollar bill for which send me "Selling Electricity" for one year from date.

Signature.....

Address.....

City or Town.....

State.....

Company.....

NOV 5 1908

HALT and HOLD

The buyer's attention through the attractiveness of the vehicle conveying your advertising appeal and the latter will surely "get home."

Real Photograph Advertising Cards

This pose is one of a number for cards especially made for Brooklyn Electric Illuminating Company, Brooklyn, N. Y.

Half Tone Reproduction Full Size of Card.

are an attractive vehicle of publicity and will take "home" the Central Station's advertising appeal. A campaign in the interest of **Electric Heating Appliances** through the medium of these cards will show a surprisingly satisfying result. **This is the proof of experience.** The cards are real photographs, printed on sensitized paper direct from negatives. An original series of real photograph cards will make a producing advertising campaign.

The Rotograph Co.

Photo-Advertising Dept.

684 Broadway, New York